Modi, Beena J <beena.j.modi@wv.gov>

RE: EXT :Fwd:

1 message

Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com> Tue, Jan 18, 2022 at 7:28 AM
To: "Modi, Beena J" <beena.j.modi@wv.gov>

Beena,

I apologize for being late with this. I have no changes to the documents.

Thank you.

Sue Ellen

Sue Ellen Foor

Sr. Prin. Engineer EHS

Northrop Grumman Defense Systems

ABL Operations

210 State Route 956

Rocket Center, WV 26726

Phone: 304-726-5506

Cell: 301-697-3595

Fax: 304-726-5562

sueellen.foor@ngc.com

From: Modi, Beena J <beena.j.modi@wv.gov>
Sent: Tuesday, January 18, 2022 7:16 AM
To: Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com>
Subject: EXT :Fwd:

---------- Forwarded message ---------
From: **Modi, Beena J** <beena.j.modi@wv.gov>
Date: Mon, Jan 10, 2022 at 4:43 PM
Subject: Fwd:
To: <sueellen.foor@ngc.com>

Hi Sue,

please review the draft permit & the factsheet and let me know your comments by 14th January.

Thank you,

Beena modi

Modi, Beena J <beena.j.modi@wv.gov>

Fwd: R13-3534 - Submitted for Director's Signature

1 message

McCumbers, Carrie <carrie.mccumbers@wv.gov> Fri, Jan 7, 2022 at 7:51 AM
To: "Modi, Beena J" <beena.j.modi@wv.gov>

---------- Forwarded message ---------
From: **Williams, Jerry** <jerry.williams@wv.gov>
Date: Fri, Jan 7, 2022 at 7:51 AM
Subject: R13-3534 - Submitted for Director's Signature
To: Beverly D McKeone <beverly.d.mckeone@wv.gov>
CC: Stephanie R Mink <Stephanie.R.Mink@wv.gov>, Carrie McCumbers <carrie.mccumbers@wv.gov>, Beena J Modi <beena.j.modi@wv.gov>

Bev,

Attached to this email is the final permit, evaluation and completed AirTrax sheet for R13-3534 (Alliant Techsystems Operations, LLC - ABL) ready for the Director's signature. The public notice period ended on 1/6/2022. No comments were received.

I shared the IPR file with Stephanie.

Documents emailed to:

Robert Hadra	bob.hadra@ngc.com
Sue Ellen Foor	sueellen.foor@ngc.com

Please let me know if you need additional information or if you have any questions.

--

Jerry Williams, P.E.

WVDEP – Division of Air Quality

304-414-1913

jerry.williams@wv.gov

3 attachments

R13-3534 Final AirTrax Sheet.pdf
5K

057-00011_EVAL_13-3534.pdf
237K

057-00011_PERM_13-3534.pdf
302K

Modi, Beena J <beena.j.modi@wv.gov>

FW: EXT :PAYMENT CONFIRMATION

1 message

Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com> Wed, Sep 1, 2021 at 4:32 PM
To: "Beena.J.Modi@wv.gov" <Beena.J.Modi@wv.gov>

Beena,

Please find the receipt for the application fee attached.

Once the affidavit for the public notice is received, I will forward you a copy.

Respectfully,

Sue Ellen Foor

Sr. Prin. Engineer EHS

Northrop Grumman Defense Systems

ABL Operations

210 State Route 956

Rocket Center, WV 26726

Phone: 304-726-5506

Cell: 301-697-3595

Fax: 304-726-5562

sueellen.foor@ngc.com

From: Scott, Kimberly A <kimberly.a.scott@wv.gov>
Sent: Wednesday, September 1, 2021 1:56 PM
To: Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com>
Subject: EXT :PAYMENT CONFIRMATION

Sue Ellen,

Attached is the payment confirmation.

Thank you and have a great afternoon,

--

Kim Scott

WV Dept. of Environmental Protection

Business Operations Office

Accounts Receivable

601 57th Street SE

Charleston, WV 25304

Email: Kimberly.A.Scott@wv.gov

Telephone: 304-926-0499 ext. 41950

R13-3534 ID 057-00011 - PAYMENT.pdf
320K

Modi, Beena J <beena.j.modi@wv.gov>

R30-05700011-2019 (1 of 3) (SM01)

1 message

Modi, Beena J <beena.j.modi@wv.gov> Mon, Oct 4, 2021 at 5:26 PM
To: bob.hadra@ngc.com, sueellen.foor@ngc.com

Your Title V application for a significant permit modification of the above referenced facility was received by this Division on August 31, 2021. After review of said application, it has been determined that the application is administratively complete as submitted.

The applicant has the duty to supplement or correct the application. An applicant who fails to submit any relevant facts or who has submitted incorrect information in any permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit modification.

The submittal of a complete application shall not affect the requirement that any source have all **preconstruction permits** required under the rules of the Division.

If during the processing of this application it is determined that additional information is necessary to evaluate or take final action on this application, a request for such information will be made in writing with a reasonable deadline for a response. The source's ability to operate without a Title V permit modification in accordance with 45CSR§30-4.1.a.2. (if applicable), shall be in effect from the date of startup of the proposed changes until the final permit modification is issued, provided that the applicant submits any requested additional information by the deadline specified. This protection shall cease to apply if, subsequent to the completeness determination made pursuant to paragraph 6.1.d of 45CSR30 and as required by paragraph 4.1.b, the applicant fails to submit any additional information identified as being needed to process the application by the deadline specified in writing.

Please remember, **failure of the applicant to timely submit information required or requested to process the application may cause the Application Shield (if applicable) to be revoked.** Should you have any questions regarding this determination, please contact me.

Sincerely,

Beena Modi

Title V Permit Engineer

Beena.j.modi@wv.gov

Received
August 31, 2021
WV DEP/Div of Air Quality

Division of Air Quality Permit Application Submittal

Please find attached a permit application for : Northrop Grumman/Alliant Techsystems Operations LLC/ABL Facility
[Company Name; Facility Location]

- DAQ Facility ID (for existing facilities only): 057-00011
- Current 45CSR13 and 45CSR30 (Title V) permits associated with this process (for existing facilities only): R30-05700011-2019 Pt 1

- Type of NSR Application (check all that apply):
  - ☑ Construction
  - ☐ Modification
  - ☐ Class I Administrative Update
  - ☐ Class II Administrative Update
  - ☐ Relocation
  - ☐ Temporary
  - ☐ Permit Determination

- Type of 45CSR30 (TITLE V) Application:
  - ☐ Title V Initial
  - ☐ Title V Renewal
  - ☐ Administrative Amendment**
  - ☐ Minor Modification**
  - ☐ Significant Modification**
  - ☐ Off Permit Change

****If the box above is checked, include the Title V revision information as ATTACHMENT S to the combined NSR/Title V application.**

- Payment Type:
  - ☑ Credit Card (Instructions to pay by credit card will be sent in the Application Status email.)
  - ☐ Check (Make checks payable to: WVDEP – Division of Air Quality)
    Mail checks to:
    WVDEP – DAQ – Permitting
    Attn: NSR Permitting Secretary
    601 57th Street, SE
    Charleston, WV 25304

Please wait until DAQ emails you the Facility ID Number and Permit Application Number. Please add these identifiers to your check or cover letter with your check.

- If the permit writer has any questions, please contact (all that apply):
  - ☐ Responsible Official/Authorized Representative
    - Name:
    - Email:
    - Phone Number:
  - ☑ Company Contact
    - Name: Sue Ellen Foor
    - Email: sueellen.foor@ngc.com
    - Phone Number: 304-726-5506 cell phone: 240-727-5581
  - ☐ Consultant
    - Name:
    - Email:
    - Phone Number:

Table of Contents

Northrop Grumman Corporation
Defense Systems Group
Alliant Techsystems Operations LLC
ABL Operations
210 State Route 956
Rocket Center. WV 26726

August 30, 2021

Laura Crowder, Director
WV Department of Environmental Protection
Division of Air Quality
601 – 57th Street
Charleston, WV 25304

Alliant Techsystems Operations LLC
Allegany Ballistics Laboratory
WVDAQ ID# 057-00011

SUBJECT: R13 Permit to Construct Application

Dear Director Crowder:

Northrop Grumman – Alliant Techsystems Operations LLC - Allegany Ballistics Laboratory (ABL) hereby submits the enclosed application for the addition of a new rocket motor processing operation. We believe the enclosed application contains the appropriate elements as indicated by the DAQ's checklist for the NSR (45CSR13) Application. The permit fee for the application will be $3,000. The permit fee will be paid by Visa over the phone once a permit review is received and the invoice will be submitted upon payment. Should you have additional questions regarding this submittal please contact me at 304-726-5506 or sueellen.foor@ngc.com.

Sincerely,

Sue Ell Foor

Sue Ellen Foor
Environmental Engineer
Alliant Techsystems Operations LLC
Allegany Ballistics Laboratory

cc: Chris Scanlan

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☒ **CONSTRUCTION** ☐ **MODIFICATION** ☐ **RELOCATION**
☐ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☐ **CLASS II ADMINISTRATIVE UPDATE** ☐ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**
☒ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
Alliant Techsystems Operations LLC

2. Federal Employer ID No. ***(FEIN):***
27 - 4026908

3. Name of facility *(if different from above):*
Northrop Grumman – Alliant Techsystems Operations LLC
Allegany Ballistics Laboratory (ABL)

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
Allegany Ballistics Laboratory
210 State Route 956
Rocket Center, WV 26726

5B. Facility's present physical address:
Same as mailing address

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☒ **YES** ☐ **NO**
- If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**
- If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation:

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**
- If **YES,** please explain: Facility is leased from the Navy and operated by Northrop Grumman
- If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be constructed, **modified,** relocated, administratively updated or temporarily permitted (e.g., coal preparation plant, primary crusher, etc.): Adding a new facility for winding composite rocket motor cases and applying adhesive systems and insulators to the interior of the cases prior to loading them with propellant.

10. North American Industry Classification System **(NAICS)** code for the facility:
336415

11A. DAQ Plant ID No. (for existing facilities only):
0 5 7 – 0 0 0 1 1

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R30-05700011-2019 Part 1 (for this process only).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

Turn left off of WV State Route 956 onto plant access road just after crossing bridge into West Virginia.

12.B. New site address (if applicable):	12C. Nearest city or town: Short Gap, WV	12D. County: Mineral
12.E. UTM Northing (KM): 686.5	12F. UTM Easting (KM): 4381.2	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:
Install a new chamber preparation facility for a new rocket motor program. The operations will include 2 exhaust hoods that will encompass wipe cleaning, sanding, priming, and painting operations of rocket motor cases for the AARGM-ER program.

14A. Provide the date of anticipated installation or change: – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen:	14B. Date of anticipated Start-Up if a permit is granted: 10/20/2021

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day 16 Days Per Week 5 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved? ☐ **YES** ☒ **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known).* A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known).* Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) .
– Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**
– Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**
– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations
☐ Chemical Processes
☐ Concrete Batch Plant
☐ Grey Iron and Steel Foundry
☐ Haul Road Emissions
☐ Hot Mix Asphalt Plant
☐ Incinerator
☐ Indirect Heat Exchanger
☐ Quarry
☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Storage Tanks
☒ General Emission Unit, specify Spray booths, exhaust hoods

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems
☐ Adsorption Systems
☐ Afterburner
☐ Baghouse
☐ Condenser
☐ Electrostatic Precipitator
☐ Flare
☒ Mechanical Collector
☐ Wet Collecting System
☐ Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☐ **YES** ☒ **NO**

➢ If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's ***"Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity
☐ Authority of Governmental Agency
☐ Authority of Partnership
☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☒ **Responsible Official** / ☐ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE _____ DATE: 8-30-21

(Please use blue ink) *(Please use blue ink)*

35B. Printed name of signee: Robert Hadra		35C. Title: Director-Safety & SFPMO
35D. E-mail: bob.hadra@ngc.com	36E. Phone: 304-726-5358	36F. FAX: 304-726-5183
36A. Printed name of contact person (if different from above): Sue Ellen Foor		36B. Title: Env. Engineer
36C. E-mail: sueellen.foor@ngc.com	36D. Phone: 304-726-5506	36E. FAX: 304-726-5562

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☒ **Attachment A: Business Certificate**
- ☒ **Attachment B: Map(s)**
- ☒ **Attachment C: Installation and Start Up Schedule**
- ☒ **Attachment D: Regulatory Discussion**
- ☒ **Attachment E: Plot Plan**
- ☒ **Attachment F: Detailed Process Flow Diagram(s)**
- ☒ **Attachment G: Process Description**
- ☒ **Attachment H: Material Safety Data Sheets (MSDS)**
- ☒ **Attachment I: Emission Units Table**
- ☒ **Attachment J: Emission Points Data Summary Sheet**
- ☐ **Attachment K: Fugitive Emissions Data Summary Sheet**
- ☒ **Attachment L: Emissions Unit Data Sheet(s)**
- ☒ **Attachment M: Air Pollution Control Device Sheet(s)**
- ☒ **Attachment N: Supporting Emissions Calculations**
- ☒ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
- ☒ **Attachment P: Public Notice**
- ☐ **Attachment Q: Business Confidential Claims**
- ☐ **Attachment R: Authority Forms**
- ☒ **Attachment S: Title V Permit Revision Information**
- ☒ **Application Fee**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- ☐ ***Forward 1 copy of the application to the Title V Permitting Group and:***
- ☐ ***For Title V Administrative Amendments:***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit,***
- ☐ ***For Title V Minor Modifications:***
  - ☐ ***Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit.***
- ☐ ***For Title V Significant Modifications processed in parallel with NSR Permit revision:***
  - ☐ ***NSR permit writer should notify a Title V permit writer of draft permit,***
  - ☐ ***Public notice should reference both 45CSR13 and Title V permits,***
  - ☐ ***EPA has 45 day review period of a draft permit.***

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

WEST VIRGINIA
STATE TAX DEPARTMENT

BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
ALLIANT TECHSYSTEMS OPERATIONS LLC
210 STATE ROUTE 956
KEYSER, WV 26726-9219

BUSINESS REGISTRATION ACCOUNT NUMBER: **2247-4467**

This certificate is issued on: 06/1/2011

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered
to conduct business in the State of West Virginia at the location above.

This certificate is not transferrable and must be displayed at the location for which issued.

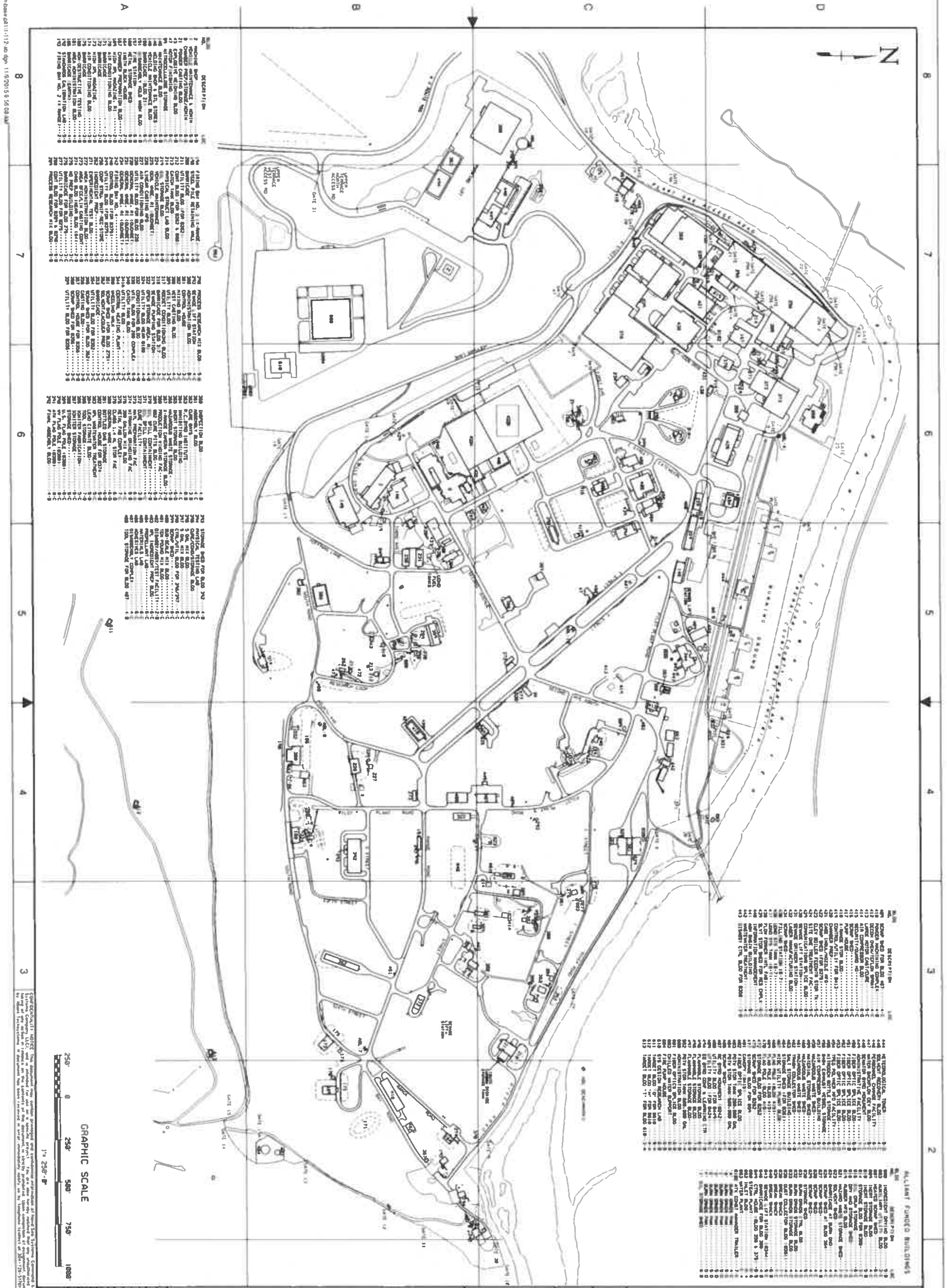
This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.4
L1238748288

ATTACHMENT B



ATK TACTICAL SYSTEMS COMPANY LLC
ALLEGANY BALLISTICS LABORATORY
210 STATE ROUTE 956
ROCKET CENTER, WV 26726-3548

ABL ROCKET CENTER, WV

PLANT 1
GENERAL MAP
PLAN AND BUILDING LIST

APPROVALS		DATE
DRAFTER	DRB	10-15-15
CHECKER		
ENGR		
DES SUPV		
AREA SUPV		
SAFETY		
ENG MGR		

DATE	DRAWING HISTORY

THIS DRAWING HAS BEEN ARCHIVED PER WBS STATUS

CAGE CODE 70272 SIZE D
SCALE: 1" = 250.0
BASE PLT1
1-112-AB
SHEET 2 OF 4
PLT-1

INTERPRET THIS DRAWING IN ACCORDANCE WITH DOD-STD-100

ATTACHMENT C

EQUIPMENT INSTALLATION AND START-UP SCHEDULE

Proposed Installation Date	Proposed Start-Up Date	Emissions Unit (Source)	
		ID No.[1]	Source
10/11/21	12/20/21	2-19S	Crossdraft Paint Booth
10/11/21	12/20/21	2-20S	Crossdraft Paint Booth

ATTACHMENT D
REGULATORY DISCUSSION

A description of all state and federal regulations that affect the entire Northrop Grumman Alliant Techsystems Operations LLC facility is included in the facility's Title V permits. The chamber preparation equipment addressed in this application will be included in Part 1 of the facility's Title V permit. The following discussions include only regulations that pertain to the operations which are proposed in this permit application.

--Facility Level Applicable Regulations and Compliance Statements:
---WVDAQ Regulation 4 - Objectionable odors are not a normal occurrence. However, facility will comply with applicable prohibition from emitting objectionable odors by taking all reasonable measures to minimize objectionable odors if such a situation occurs.

---WVDAQ Regulation 7 - Facility will comply with applicable opacity limits (Sections 3.1 and 3.2) by maintaining trained opacity observer personnel to notify plant supervision if a non-compliance condition occurs or by calculations.

---WVDAQ Regulation 11 - Facility will comply with all applicable requirements of this regulation as requested by the West Virginia Air Pollution Control Commission during declared air pollution emergency episodes.

---WVDAQ Regulation 22 - Facility will comply with all applicable requirements of this regulation regarding payment of processing fees for permit applications by prompt payment of all applicable fees.

---WVDAQ Regulation 27 - Facility is complying with all applicable requirements of this regulation regarding the prevention and control of discharges of toxic air pollutants (TAPS) by application of technology or operational changes as defined in CO-R27-91-20 issued June 25, 1991 (superceded by CO-R27-99-23-A(91) issued June 14, 1999) (see below for a detailed explanation of the plant's compliance status on CO-R27-91-20). R13-0898B replaced the consent order. The sparging system in the permit is the only significant TAP source remaining on the facility (other sources are lab use).

---WVDAQ Regulation 29 - Facility will comply with all applicable requirements of this regulation regarding any requested submission of air emissions inventory data by timely submission of the required emission inventory.

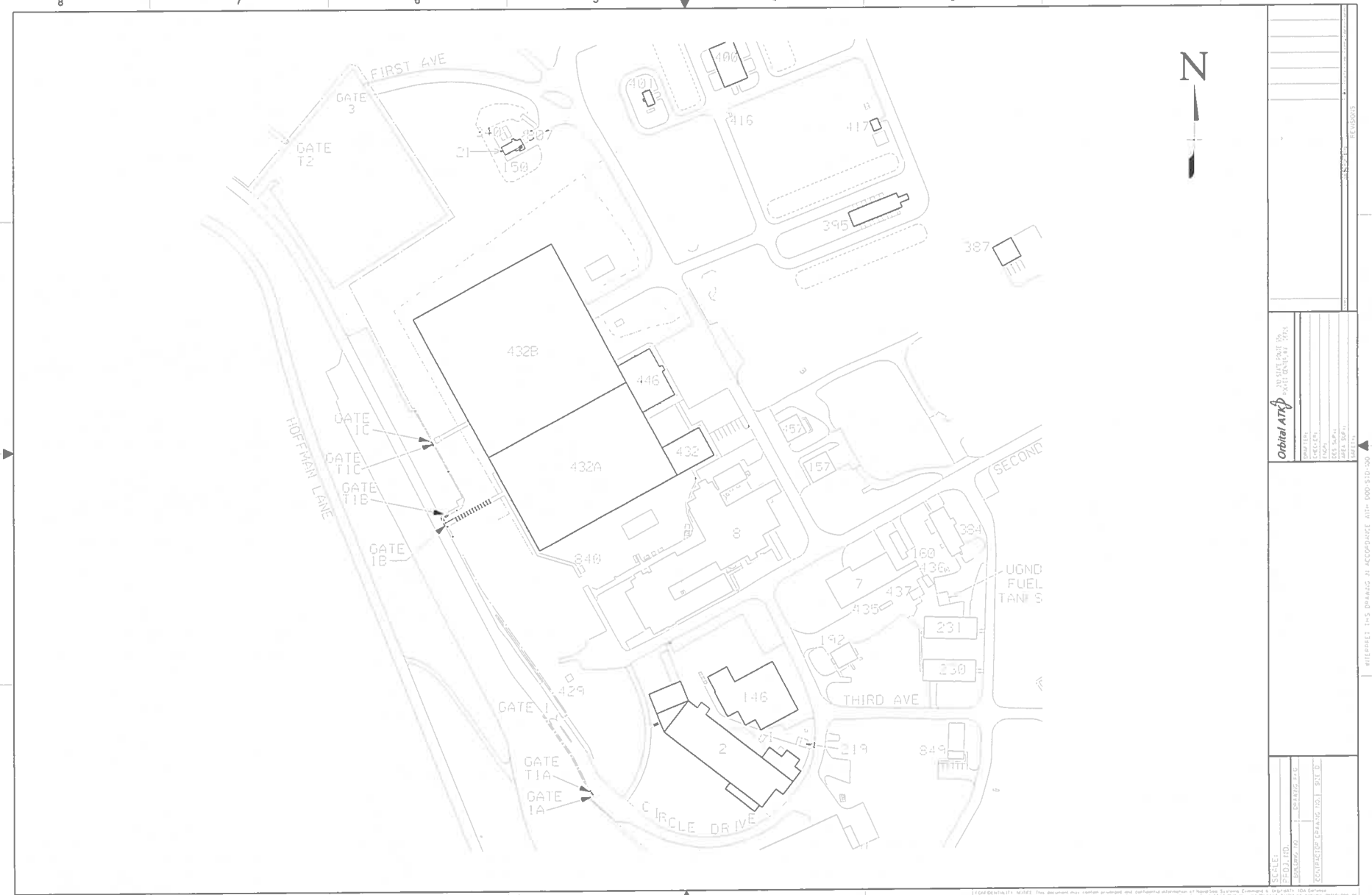
---WVDAQ Regulation 30 - Facility will comply with all applicable requirements of this regulation regarding its Title V Operating Permit.

---WVDAQ Regulation 31 - Facility will comply with all applicable requirements of this regulation regarding confidential information.

--Existing Permits and Consent Orders:
1. Reg. 13-401 issued 1978. Superceded by 13-0401A issued in 1999. Superceded by 13-0401B issued in May, 2001.

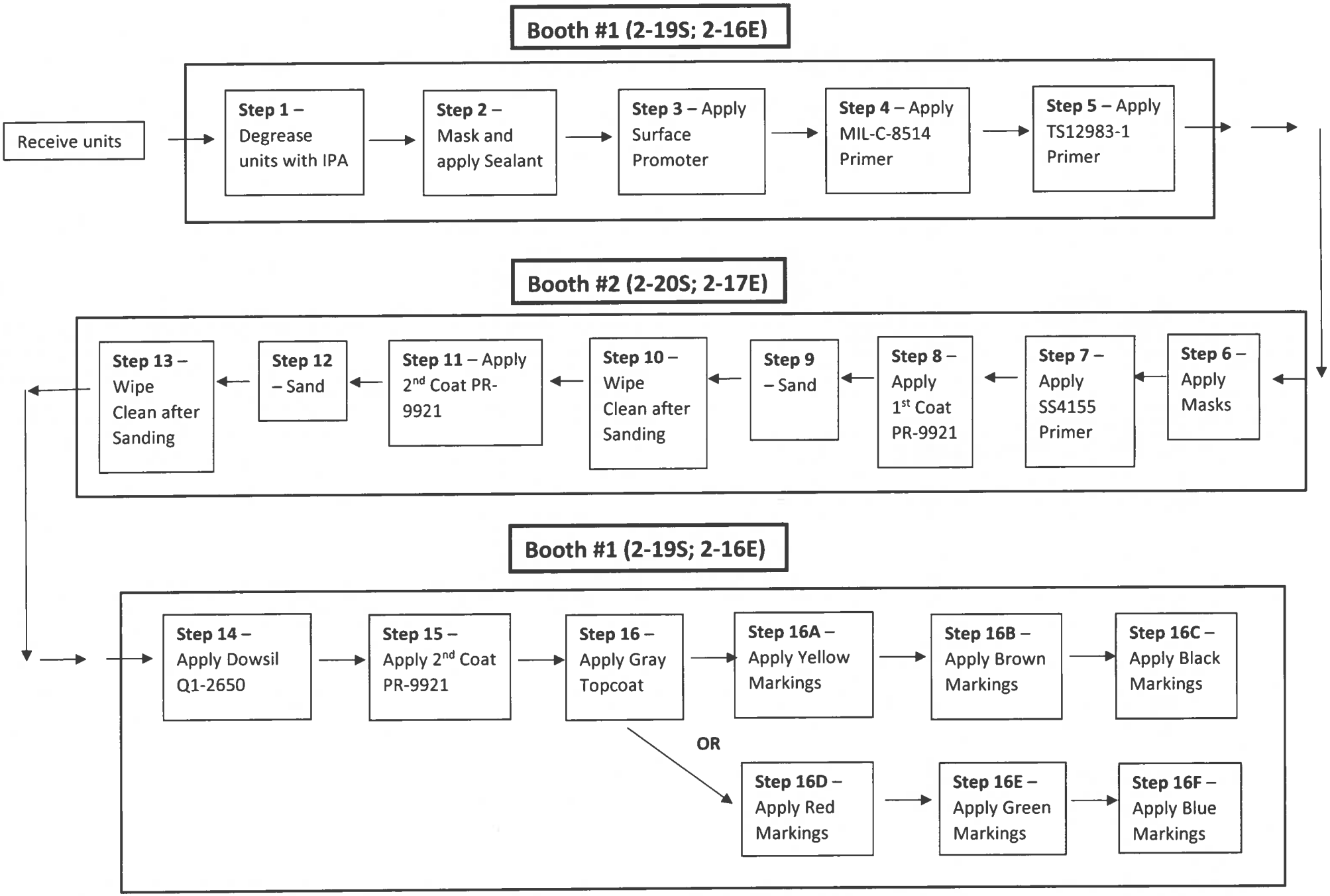
2. Reg. 13-573 issued 1980. Deemed inactive by 13-573A issued in May, 2001.
3. Reg. 13-621 issued 1981. Deemed inactive by 13-621A issued in May, 2001.
4. Reg. 13-898 issued 1986. Superceded by 13-898C issued in May, 2016.
5. Reg. 13-974 issued 1988. Superceded by 13-974A issued in May, 2001. This permit is obsolete and is requested to be cancelled. Boilers under this permit have been shut down, disconnected and replaced by natural gas boilers under Reg. 13-3186 issued August, 2014.
6. Reg. 13-1047 issued 1988. Superceded by 13-1047A issued in July, 2001. Superceded by 13-1047B issued in March, 2002.
7. Reg. 13-1307 issued 1991. Deemed inactive in 1997.
8. Reg. 13-1403 issued 1991. Superceded by 13-1642 issued 1994. Superceded by 13-1694 issued in 1994. Superceded by 13-1694A issued in July, 2001.
9. Reg. 13-1455 issued 1992. Superceded by 13-1455A issued in July, 2001.
10. Reg. 13-1771 issued 1995. Superceded by 13-1771A issued in April, 2003.
11. Reg. 13-1782 issued 1995. Superceded by 13-1782A issued in July, 2001.
12. Reg. 13-1797 issued 1995. Superceded by 13-1797A issued in January, 2002.
13. Reg. 13-1798 issued 1995. Superceded by 13-1798A issued in July, 2001.
14. Reg. 13-2023 issued 1996. Superceded by 13-2023C issued in May, 2014.
15. Reg. 13-2037 issued 1996. Superceded by 13-2037A issued in July, 2001.
16. Reg. 13-2246 issued 1999.
17. Reg. 13-2301 issued 1999. Superceded by 13-2301A issued in July, 2001. Superceded by 13-2606B in April, 2009.
18. Reg. 13-2579A issued in October, 2005.
19. Reg. 13-2606 issued in February, 2005. Superceded by 13-2023C in May, 2014.
20. Reg 13-2680 issued January, 2007 is obsolete and is requested to be cancelled. Program has ended and equipment has been disconnected.
21. Reg. 13-2754 issued August, 2008 is obsolete and is requested to be cancelled. Program has ended and all equipment has been removed from the facility.
22. CO-R6,13,25-99-35A(95) issued January 5, 2000 (Open Burning). (This amended and updated CO-R6,13,25-95-8 issued November 8, 1995).
23. Reg 30-05700011-2019 Part 1 issued July, 2019.
24. Reg. 30-05700011-2019 Part 2 issued September, 2019.
25. Reg. 30-05700011-2019 Part 3 issued November, 2019.
26. Reg. 13-3186 issued 2014. Superceded by 13-3186C issued in April, 2021
27. Reg. 13-3334 issued 2017. Superceded by 13-3334A issued in September, 2020.
28. Reg. 13-3408 issued 2018. Superceded by 13-3408A issued in May, 2020.

ATTACHMENT E

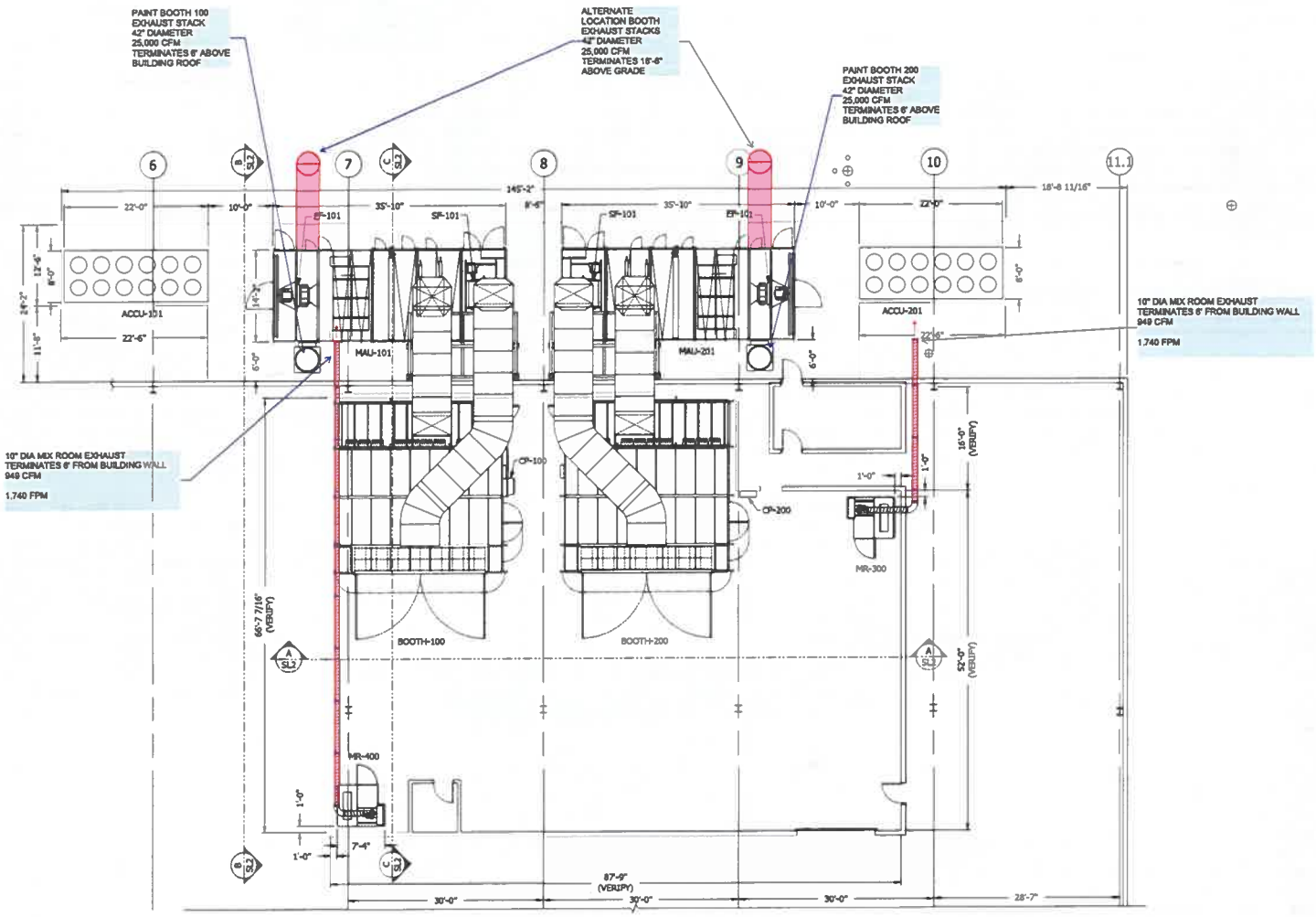


base gtt\432 area permit.dgn 8/23/2021 11:49:25 AM

ATTACHMENT F



ATTACHMENT F



PLAN VIEW

GLOBAL FINISHING SOLUTIONS
12731 NORWAY ROAD
OSSEO, WI 54758 USA
800-848-6738
globalfinishing.com

SCALE	1/8" = 1'-0"
DRAWN BY	DWQ
DATE	6/25/2021
REVIEW BY	
REVIEW DATE	

MODEL INFO
ACDW-251019-PSB-3F-S
CROSSDRAFT PAINT BOOTHS
SYSTEM LAYOUT - PLAN VIEW

SHIP TO
NORTHRUP GRUMMAN SYSTEM CORP
210 STATE ROUTE 956
ROCKET CENTER, WV 26726

SOLD TO
NORTHRUP GRUMMAN
5995 OPUS PARKWAY SUITE 300
ROCKET CENTER, WV 26726

ORDER/SERIAL NUMBER
U128731

DRAWING SET: DS60
REVISION: A

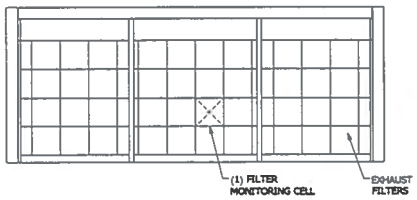
DRAWING
SL1

NOTES:

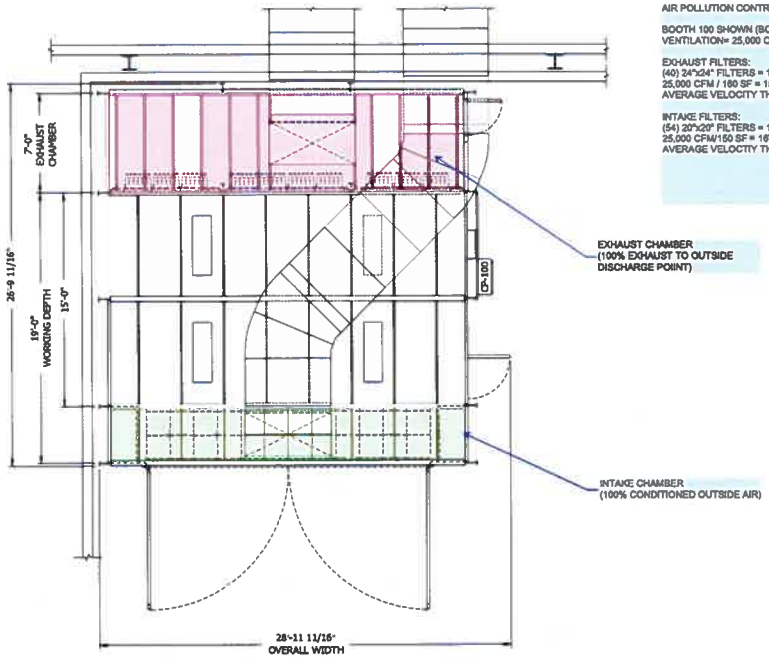
1. BOOTH IS FABRICATED FROM 18 GAGE WHITE PRE-COAT SHEET STEEL; PRE-PUNCHED AND COMPANION FLANGED FOR BOLT TOGETHER ASSEMBLY.

2. BOOTH SUPPORT STRUCTURE IS FABRICATED FROM STRUCTURAL I- BEAM; PRE-DRILLED AND FACTORY PRIMED & PAINTED WHITE.

3. INCLUDED, BUT NOT SHOWN:
(1) 3/4" SOLENOID VALVE
(4) DOOR LIMIT SWITCHES
(1) GROUNDING BAR



EXHAUST FILTER WALL



PLAN VIEW

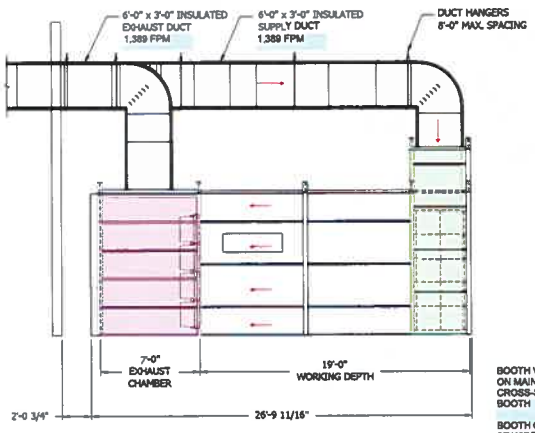
AIR POLLUTION CONTROL

BOOTH 100 SHOWN (BOOTH 200 IS SAME SIZE AND SIMILAR)
VENTILATION= 25,000 CFM

EXHAUST FILTERS:
(40) 24"x24" FILTERS = 160 SQUARE FEET (SF)
25,000 CFM / 160 SF = 156 FEET/MIN (FPM)
AVERAGE VELOCITY THROUGH FILTER = 156 FPM

INTAKE FILTERS:
(54) 20"x20" FILTERS = 150 SF
25,000 CFM/150 SF = 167 FPM
AVERAGE VELOCITY THROUGH FILTER = 167 FPM

BOOTH EQUIPMENT SPECIFICATIONS	
BOOTH LIGHTS	
PART #	230-028
SIZE	48
ROW QTY	2
TYPE	LED
VOLTAGE	120/277
RATING	CLASS 1, DIV. 2
ACCESS	INSIDE
QUANTITY	6
INTAKE FILTERS	
PART #	216-550
SIZE	20" x 20" x1"
QUANTITY	54
3 STAGE FILTRATION	
STAGE 1	CPA ROLL MEDIA
PART #	216-543
SIZE	120"x50"x2"
QUANTITY	1
STAGE 2	MEPT PANEL
PART #	216-517
SIZE	24"x24"x2"
QUANTITY	40
STAGE 3	6 POCKET BAG
PART #	216-516
SIZE	24"x24"x12"
QUANTITY	40
MAN ACCESS DOOR	
SIZE	3'x7'
TYPE	w/ OBS.
QUANTITY	1
MAN ACCESS DOOR	
SIZE	2'-6"x7'
TYPE	SOLID
QUANTITY	1 (IN CHAMBER)
PRODUCT DOORS	
SIZE	20'Wx10'H
TYPE	SOLID
STYLE	SWING
QUANTITY	1

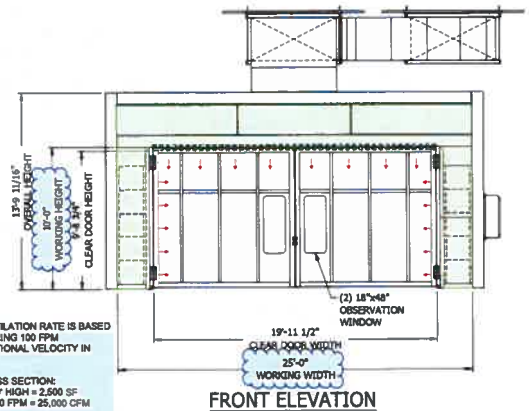


SIDE ELEVATION

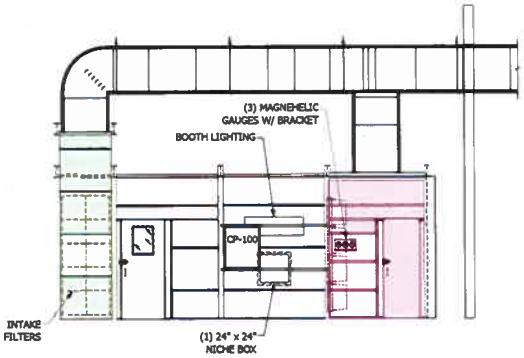
BOOTH VENTILATION RATE IS BASED ON MAINTAINING 100 FPM CROSS-SECTIONAL VELOCITY IN BOOTH

BOOTH CROSS SECTION:
25' WIDE X 10' HIGH = 2,500 SF
2,500 SF X 100 FPM = 25,000 CFM

BOOTH VENTILATION OF 25,000 CFM



FRONT ELEVATION



SIDE ELEVATION

GLOBAL FINISHING SOLUTIONS
12731 NORWAY ROAD
OSSEO, WI 54758 USA
800-848-8738
globalfinishing.com

SCALE	1/4" = 1'-0"
DRAWN BY	DWQ
DATE	6/25/2021
REVIEW BY	
REVIEW DATE	

MODEL INFO
ACDW-251019-PSB-3F-S
CROSSDRAFT PAINT BOOTH
GENERAL ARRANGEMENT

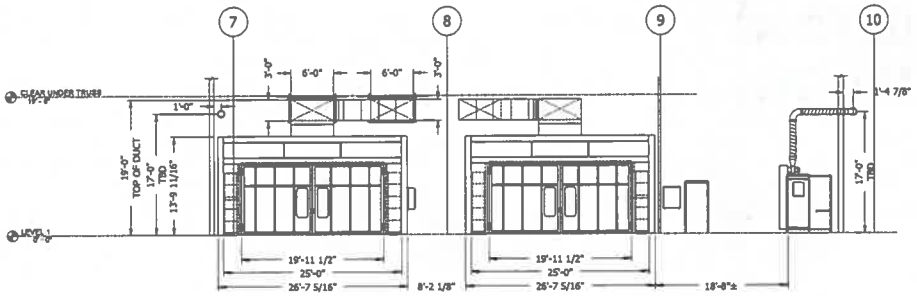
SHIP TO
NORTHRUP GRUMMAN SYSTEM CORP
210 STATE ROUTE 956
ROCKET CENTER, WV 26726

SOLD TO
NORTHRUP GRUMMAN
5995 OPUS PARKWAY SUITE 300
ROCKET CENTER, WV 26726

ORDER/SERIAL NUMBER
U128731

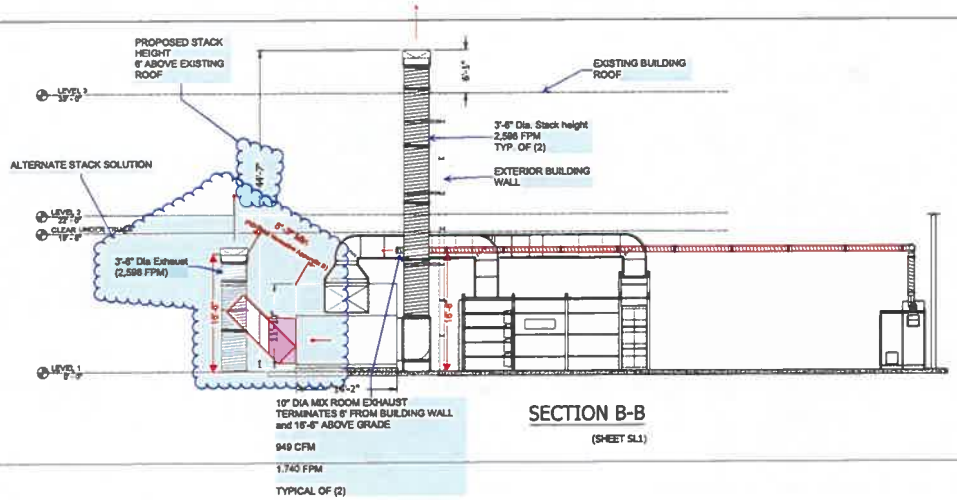
DRAWING SET: DS60
REVISION: A

DRAWING
GA-A



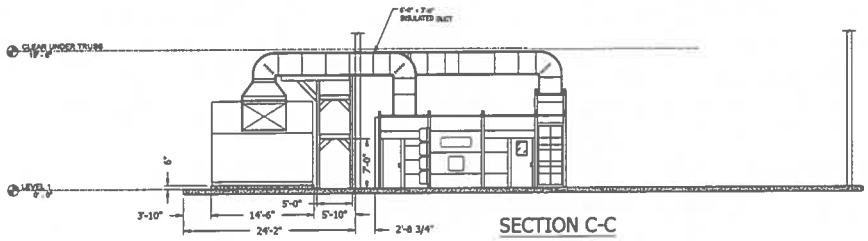
SECTION A-A

(SHEET SL1)



SECTION B-B

(SHEET SL1)



SECTION C-C

(SHEET SL1)

GLOBAL FINISHING SOLUTIONS
12731 NORWAY ROAD
OSSEO, WI 54758 USA
800-848-6738
globalfinishing.com

SCALE	1/8" = 1'-0"
DRAWN BY	DWQ
DATE	6/25/2021
REVIEW BY	
REVIEW DATE	

MODEL INFO
ACDW-251019-PSB-3F-S
CROSSDRAFT PAINT BOOTHS
SYSTEM LAYOUT - ELEVATIONS

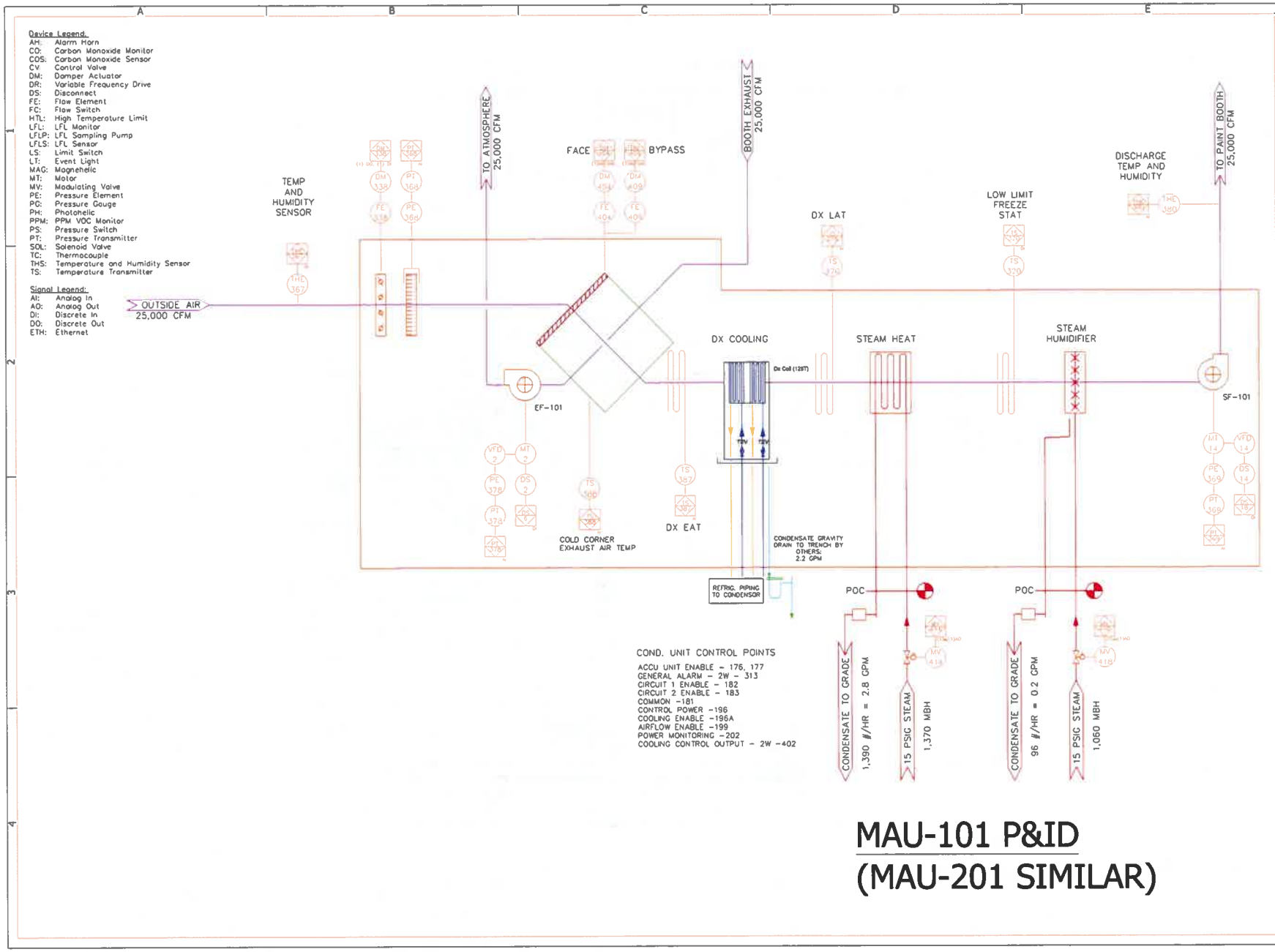
SHIP TO
NORTHRUP GRUMMAN SYSTEM CORP
210 STATE ROUTE 956
ROCKET CENTER, WV 26726

SOLD TO
NORTHRUP GRUMMAN
5995 OPUS PARKWAY SUITE 300
ROCKET CENTER, WV 26726

ORDER/SERIAL NUMBER
U128731

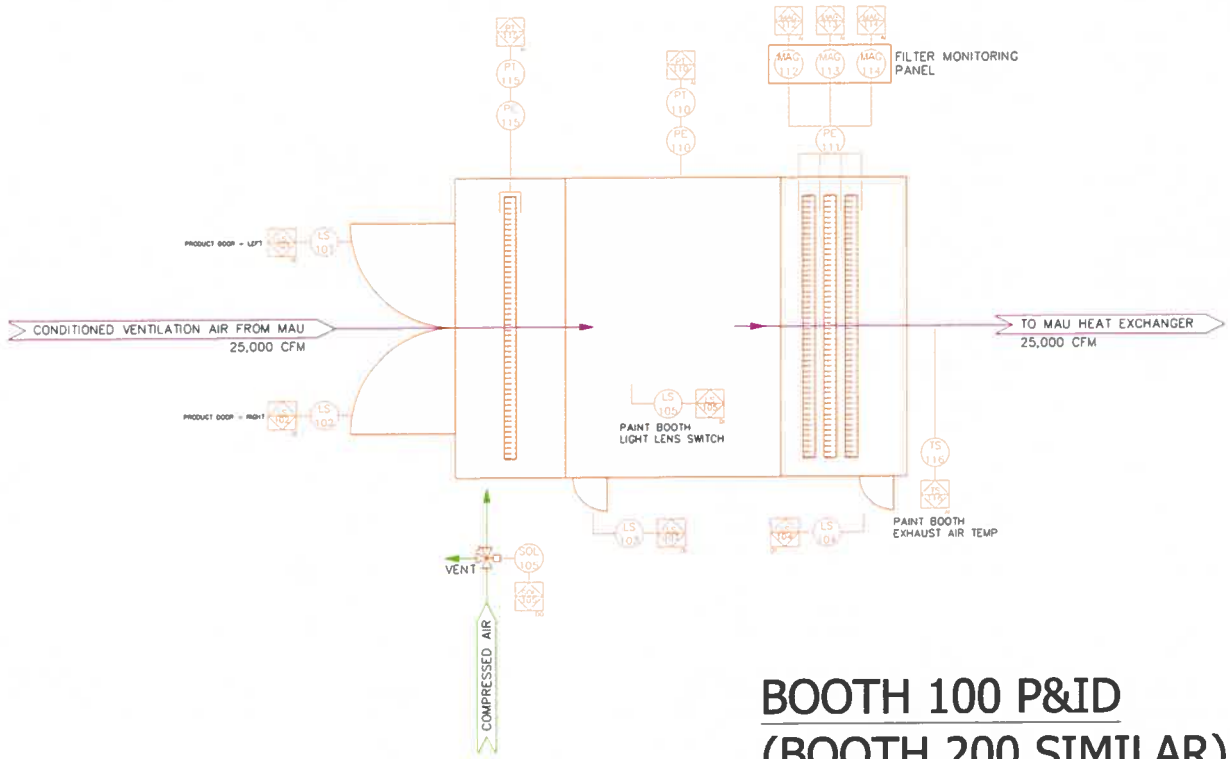
DRAWING SET	REVISION
DS60	A

DRAWING
SL2


Device Legend:
AH: Alarm Horn
CO: Carbon Monoxide Monitor
COS: Carbon Monoxide Sensor
CV: Control Valve
DM: Damper Actuator
DR: Variable Frequency Drive
DS: Disconnect
FE: Flow Element
FC: Flow Switch
HTL: High Temperature Limit
LFL: LFL Monitor
LFLP: LFL Sampling Pump
LFLS: LFL Sensor
LS: Limit Switch
LT: Event Light
MAG: Magnehelic
MT: Motor
MV: Modulating Valve
PE: Pressure Element
PG: Pressure Gauge
PH: Photohelic
PPM: PPM VOC Monitor
PS: Pressure Switch
PT: Pressure Transmitter
SOL: Solenoid Valve
TC: Thermocouple
THS: Temperature and Humidity Sensor
TS: Temperature Transmitter
Signal Legend:
AI: Analog In
AO: Analog Out
DI: Discrete In
DO: Discrete Out
ETH: Ethernet
OUTSIDE AIR
25,000 CFM
TEMP AND HUMIDITY SENSOR
TO ATMOSPHERE
25,000 CFM
FACE
BYPASS
BOOTH EXHAUST
25,000 CFM
DX LAT
LOW LIMIT FREEZE STAT
DISCHARGE TEMP AND HUMIDITY
TO PAINT BOOTH
25,000 CFM
EF-101
DX COOLING
STEAM HEAT
STEAM HUMIDIFIER
SF-101
COLD CORNER EXHAUST AIR TEMP
DX EAT
CONDENSATE GRAVITY DRAIN TO TRENCH BY OTHERS: 2.2 GPM
REFRIG. PIPING TO CONDENSOR
POC
POC
CONDENSATE TO GRADE
1,390 #/HR = 2.8 GPM
15 PSIG STEAM
1,370 MBH
CONDENSATE TO GRADE
96 #/HR = 0.2 GPM
15 PSIG STEAM
1,060 MBH
COND. UNIT CONTROL POINTS
ACCU UNIT ENABLE - 176, 177
GENERAL ALARM - 2W - 313
CIRCUIT 1 ENABLE - 182
CIRCUIT 2 ENABLE - 183
COMMON -181
CONTROL POWER -196
COOLING ENABLE -196A
AIRFLOW ENABLE -199
POWER MONITORING -202
COOLING CONTROL OUTPUT - 2W -402
MAU-101 P&ID
(MAU-201 SIMILAR)
GLOBAL FINISHING SOLUTIONS
12731 NORWAY ROAD
OSSEO, WI 54758 USA
800-848-6738
globalfinishing.com
SCALE NTS
DRAWN BY BPS
DATE 06/25/2021
REVIEW BY
REVIEW DATE
MODEL INFO MAKE-UP AIR UNIT P&ID
SHIP TO ROCKET CENTER, WEST VIRGINIA
SOLD TO NORTHROP GRUMMAN CORPORATION
ORDER/SERIAL NUMBER U128731-A,B
DRAWING SET DS60
REVISION B
DRAWING PID-01

Device Legend:
AH: Alarm Horn
CO: Carbon Monoxide Monitor
COS: Carbon Monoxide Sensor
CV: Control Valve
DM: Damper Actuator
DR: Variable Frequency Drive
DS: Disconnect
FE: Flow Element
FC: Flow Switch
HTL: High Temperature Limit
LFL: LFL Monitor
LFLP: LFL Sampling Pump
LFLS: LFL Sensor
LS: Limit Switch
LT: Event Light
MAG: Magnehelic
MT: Motor
MV: Modulating Valve
PE: Pressure Element
PG: Pressure Gauge
PH: Photohelic
PPM: PPM VOC Monitor
PS: Pressure Switch
PT: Pressure Transmitter
SOL: Solenoid Valve
TC: Thermocouple
THS: Temperature and Humidity Sensor
TS: Temperature Transmitter

Signal Legend:
AI: Analog In
AO: Analog Out
DI: Discrete In
DO: Discrete Out
ETH: Ethernet



BOOTH 100 P&ID
(BOOTH 200 SIMILAR)

GLOBAL FINISHING SOLUTIONS
12731 NORWAY ROAD
OSSEO, WI 54758 USA
800-848-8738
globalfinishing.com

SCALE	NTS
DRAWN BY	BPS
DATE	06/25/2021
REVIEW BY	
REVIEW DATE	

MODEL INFO: PAINT BOOTH P&ID

SOLD TO: NORTHROP GRUMMAN CORPORATION

SHIP TO: ROCKET CENTER, WEST VIRGINIA

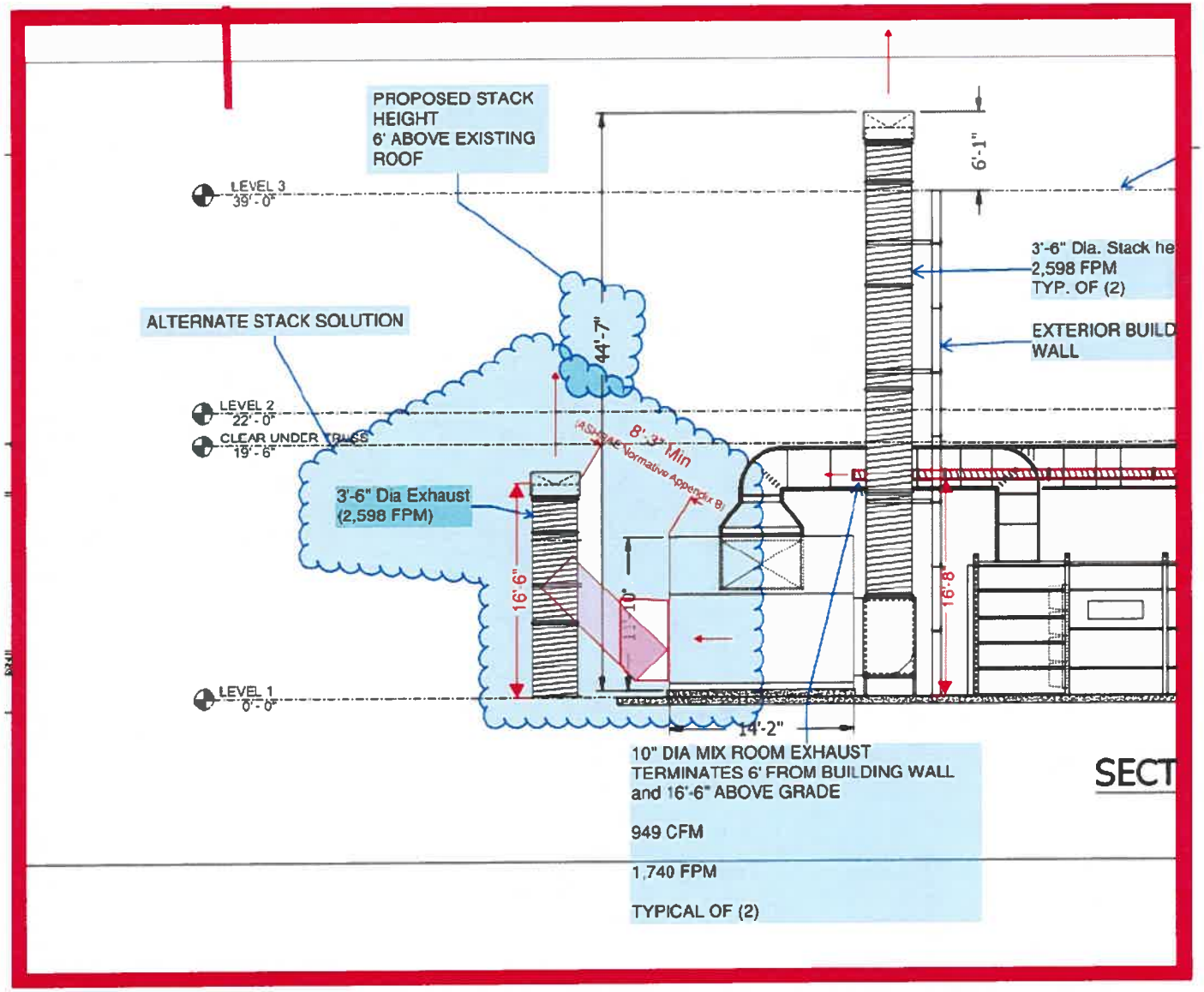
ORDER/SERIAL NUMBER: U128731-A,B

DRAWING SET: DS60

REVISION: B

DRAWING: PID-02

ATTACHMENT F
ALTERNATE DUCT PLACEMENT



ATTACHMENT G

AARGM-ER Overall Manufacturing Process Description for Building 432 at ABL, West Virginia

The AARGM-ER missile is an extended range variant of the existing legacy AARGM missile currently in full rate production. It is composed of the following seven segments: Guidance Section (GS), Control Section (CS), Warhead (WH), Rocket Motor (RM), Control Actuation System (CAS), and two Strake Assemblies. Its method of flight is by means of a rocket motor filled with solid propellant.

The process in Building 432 begins with the mechanical assembly of the seven primary components by means of assembly fixtures, fasteners, and torque wrenches. The CAS has four fins that are to be painted separate from the missile, and then mechanically fastened prior to shipment to the customer.

After the seven primary components are assembled, thus constituting the near entirety of the missile, it shall be prepared for paint along with its fins. The assembled vehicles will then be moved from the general assembly area into Paint Booth #1

In Paint Booth #1, the entire vehicle will first be cleaned with filtered, compressed air, then wiped with cloth pads that have been moistened with isopropyl alcohol *(Step 1)*, and allowed to dry at ambient conditions for five minutes. Next, in preparation for the application of a sealant, masking tape will be applied around the four primary joint seams of the vehicle, as well as the joint seams along the length of the vehicle where the strakes assemblies mate to the vehicle body. Depending on which sealant is to be applied, either PR-2001 Class B or PR-1826 Class B *(Step 2)*, the appropriate surface promoter will be applied using brushes at the joint seams, either PR-182 or PR-188 respectively *(Step 3)*. After waiting 30 minutes for the surface promoter to dry at ambient conditions, the sealant will be applied at the joints seams using a pneumatic application gun, aided with spatulas. The sealant will be allowed to cure in accordance with the manufacturer's specification at ambient conditions. After fully cured, the sealant shall be sanded flush with the outer mold line of the missile body.

Continuing in Paint Booth #1, MIL-C-8514 will be applied to the Forward Strake, Rocket Motor Housing, and Fins, via spray technique and allowed to cure at ambient for 30 minutes minimum *(Step 4)*. Then, TS12983-1 primer will be applied to all sections of the missile via spray method and allowed to cure for two hours minimum at ambient *(Step 5)*. Masking will be applied to sections of the GS, SRM, CAS and Fins for application of PR-9921 Sealant in the next paint booth *(Step 6)*.

The missile will then be moved to Paint Booth #2, where Momentive SS4155 Adhesion Promoter will be applied using wipe cloths to masked-off sections of the GS, SRM, CAS, and Fins and allowed to set for 30 minutes *(Step 7)*, immediately followed by the spray application of PR-9921 to the same areas *(Steps 8 & 11)*. The missile will then be moved to a curing area, where the PR-9921 sealant will dry for 168 hours at ambient. The missile will then be sanded *(Steps 9 & 12)* and wipe cleaned with IPA after sanding *(Steps 10 & 13)*.

The missile will then be moved back into Paint Booth #1, where Dowsil Q1-2650 adhesion promoter will be brush applied onto the surfaces where PR-9921 sealant was applied *(Step 14)* and sprayed with another coat of TS12983-1 primer *(Step 15)*. After allowing 2 hours minimum for the primer to cure at ambient, areas for stripes shall be masked on the body of the missile, followed by spray application of MIL-PRF-85285-1-H-36375 gray urethane topcoat *(Step 16)* to all remaining surfaces of the missile and allowed to cure for 720 minutes at ambient.

ATTACHMENT G

After the missile has had gray urethane topcoat applied and cured, all areas except for the primed stripe areas will be covered. A stripe of MIL-PRF-85285-1-H-33538 yellow polyurethane will be spray applied over the WH section *(Step 16a)*. A stripe of MIL-PRF-85285-1-H-30117 brown will be spray applied over the rocket motor section *(Step 16b)*. Both stripes will be allowed to cure for 720 minutes at ambient.

Finally, "NO TOUCH" and "NO LIFT" markings will be applied onto specified area of the strake assemblies, guidance section, and fins by spray application of MIL-PRF-85285-1-H-37038 black polyurethane over stencils *(Step 16c)*, and allowed to cure for 720 minutes at ambient.

A limited number of units may have special markings in blue, green, or red MIL-PRF-85285 polyurethane to indicate special designations such as inert units or other special deviations *(Steps 16d, 16e, 16f)*.

The missile will then proceed to final inspection and then packaging for shipment out of the facility to the customer.

MIL-PRF-85285-1-H urethane paints, regardless of pigment, can be cured quicker if either the paint booth or curing area are capable of inducing an elevated temperature atmosphere. If an elevated temperature cure is to be executed, the missile will have to cure for 30 minutes at ambient, followed by an elevated temperature cure of either 140°F ± 10°F for 240 ± 10 minutes, or 160°F ± 10°F for 80 minutes minimum.

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
2-19S	2-16E	Crossdraft Paint Booth - B432	2021	Variable	New - 2021	2-9C: 3 Stage Filtration
2-20S	2-17E	Crossdraft Paint Booth - B432	2021	Variable	New - 2021	2-10C: 3 Stage Filtration

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used [6]	Emission Concentration [7] (ppmv or mg/m³)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
2-16E	Vertical stack	2-19S	Cross draft paint booth	2-9C	3 stage filtra-tion with roll media, panel filter, and bag filter	8 hr / shift	2080	**VOCs**	31.35	0.56	31.35	0.56	Vapor	MB	VOC
								2-EHA	3.04	0.05	3.04	0.05			4.5
								Butyl acetate	3.4	0.05	3.4	0.05			7.5
								Ethyl benzene	0.11	0.003	0.11	0.003			0.27
								IPA	5.6	0.17	5.6	0.17			23.95
								MAK	9.7	0.15	9.7	0.15			21.8
								MEK	1.5	0.01	1.5	0.01			5.3
								Methyl acetate	2.2	0.03	2.2	0.03			7.5
								MIBK	1.2	0.04	1.2	0.04			3.1
								Xylene	0.6	0.01	0.6	0.01			1.42
								PM	14.44	0.237	0.72	0.011	Solid		PM
								Cr Cmpds	0.23	0.005	0.01	0.0003		MB	0.015
2-17E	Vertical stack	2-20S	Cross draft paint booth	2-10C	3 stage filtra-tion with roll media, panel filter, and bag filter	8 hr / shift	2080	**VOCs**	21.26	0.48	21.26	0.48	Vapor	MB	VOC
								IPA	10.43	0.313	10.43	0.313			44.6
								Varsol	0.21	0.006	0.21	0.006			0.38
								Xylene	10.62	0.159	10.62	0.159			25.7
								PM	4.37	0.07	0.22	0.0033	Solid	MB	PM

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY

SHEET for fugitive emission activities.

[1] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

[2] Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

[3] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. **DO NOT LIST** H_2, H_2O, N_2, O_2, and Noble Gases.

[4] Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[5] Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[6] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

[7] Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m^3) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO_2, use units of ppmv (See 45CSR10).

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data								
Emission Point ID No. *(Must match Emission Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (°F)	Volumetric Flow [1] (acfm) *at operating conditions*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height [2] *(Release height of emissions above ground level)*	Northing	Easting
2-16E	3'6"	Ambent	25,000 acfm	2,598 fpm	672	16'6" or 706'*	685803.49	4381262.06
2-17E	3'6"	Ambient	25,000 acfm	2,598 fpm	672	16'6" or 706'*	685803.49	4381262.06
			*stack position has not been decided yet. May be 6' higher than 2nd floor roof or ducted horizontally at 16'6"					

[1] Give at operating conditions. Include inerts.
[2] Release height of emissions above ground level.

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.
Identification Number (as assigned on *Equipment List Form*): 2-19S (2-16E)

1. Name or type and model of proposed affected source:

Global Finishing Solutions (GFS) Pressurized Dry Filter Aerospace Paint Booth
Model #ACDW-251019-PSB-3F-S

2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.

3. Name(s) and maximum amount of proposed process material(s) charged per hour:

102.5 ounces of IPA (12 units over 2 hours)
0.03 ounces of PR-182 or 188 Sealant Primer (12 units over 2 hours)
2.5 ounces of PR-2001 or PR-1826 Sealant (12 units over 2 hours)
8.6 ounces of MIL-C-8514 Primer (12 units over 2 hours)
33.6 ounces of TS12983 Primer (12 units over 2 hours) (total of 2 separate coats)
344 ounces of Gray MIL-PRF-85285 Urethane (12 units over 2 hours)
96 ounces of Brown MIL-PRF-85285 Urethane (12 units over 2 hours)
192 ounces of each Yellow and Black MIL-PRF-85285 Urethane (12 units over 1 hour)
96 ounces of each Red, Green, and Blue MIL-PRF-85285 Urethanes (12 units over 2 hours)

4. Name(s) and maximum amount of proposed material(s) produced per hour:

12 AARGM-ER rocket motor cases coated/treated with the materials provided in Item 3.

Units may be completed in either an 8 hour shift or stretch over 16 hours (first/second shift).
Cases are processed in lots of 12 units with a maximum of 30 lots per year.

5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:

Not applicable.

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form.*

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Not applicable.

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input: $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	16	Days/Week	5	Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ °F and psia

a.	NO_X		lb/hr		grains/ACF
b.	SO_2		lb/hr		grains/ACF
c.	CO		lb/hr		grains/ACF
d.	PM_{10}	0.722 (aggregate)	lb/hr	0.842	grains/ACF
e.	Hydrocarbons		lb/hr		grains/ACF
f.	VOCs	31.35 (aggregate)	lb/hr	36.675	grains/ACF
g.	Pb		lb/hr		grains/ACF
h.	Specify other(s)				
	Ethyl benzene	0.11	lb/hr	0.128	grains/ACF
	Methanol MIBK	0.01 1.21	lb/hr	0.012 1.412	grains/ACF
	Xylene	0.59	lb/hr	0.688	grains/ACF
	Chromium compounds	0.012	lb/hr	0.014	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING	RECORDKEEPING
None.	A daily record shall be kept of the number of units processed per step per shift. The daily numbers and the hours of processing time shall be added to a spreadsheet with emission rates per lot to determine actual emissions per hour. Emissions shall be calculated on a rolling 12 month calendar to ensure compliance with the annual emission limits. Records shall be maintained for a period of at least 5 years and shall be available upon request.
REPORTING	**TESTING**
Emissions from this process shall be reported annually as part of the annual emissions inventory submitted by April 1 of each year per.	If testing is required by the Director, it will be conducted using the required EPA methods.

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

Paint booths will have (3) stages of exhaust filtration that are equiped with individual Magnehelic Pressure gauges. User will conduct a daily check of the filter pressure drop across filters. Additional information can be found in the GFS Filter information (Attachment B).

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.
Identification Number (as assigned on *Equipment List Form*): 2-20S (2-17E)

1. Name or type and model of proposed affected source:

Global Finishing Solutions (GFS) Pressurized Dry Filter Aerospace Paint Booth
Model #ACDW-251019-PSB-3F-S

2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.

3. Name(s) and maximum amount of proposed process material(s) charged per hour:

4.3 ounces of SS4155 primer (12 units over 2 hours)
258 ounces of PR-9921 sealant (12 units over 1 hour) (total of 2 separate coats)
70 ounces of PM generated from sanding (12 units over 1 hour) (total of 2 separate sanding operations)
203 ounces of IPA (12 units over 2 hours) (total of 2 separate wiping operations)

4. Name(s) and maximum amount of proposed material(s) produced per hour:

12 AARGM-ER rocket motor cases coated/treated with the materials provided in Item 3.

Units may be completed in either an 8 hour shift or stretch over 16 hours (first/second shift).
Cases are processed in lots of 12 units with a maximum of 30 lots per year.

5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:

Not applicable.

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Not applicable.

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input: $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	16	Days/Week	5	Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ °F and psia

a.	NO_X		lb/hr		grains/ACF
b.	SO_2		lb/hr		grains/ACF
c.	CO		lb/hr		grains/ACF
d.	PM_{10}	0.218 (aggregate)	lb/hr	0.255	grains/ACF
e.	Hydrocarbons		lb/hr		grains/ACF
f.	VOCs	21.26 (aggregate)	lb/hr	24.803	grains/ACF
g.	Pb		lb/hr		grains/ACF
h.	Specify other(s)				
	Xylene	10.62	lb/hr	12.39	grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING	RECORDKEEPING
None.	A daily record shall be kept of the number of units processed per step per shift. The daily numbers and the hours of processing time shall be added to a spreadsheet with emission rates per lot to determine actual emissions per hour. Emissions shall be calculated on a rolling 12 month calendar to ensure compliance with the annual emission limits. Records shall be maintained for a period of at least 5 years and shall be available upon request.
REPORTING	**TESTING**
Emissions from this process shall be reported annually as part of the annual emissions inventory submitted by April 1 of each year per.	If testing is required by the Director, it will be conducted using the required EPA methods.

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

Paint booths will have (3) stages of exhaust filtration that are equiped with individual Magnehelic Pressure gauges. User will conduct a daily check of the filter pressure drop across filters. Additional information can be found in the GFS Filter information (Attachment B).

Attachment M
Air Pollution Control Device Sheet
(OTHER COLLECTORS)

Control Device ID No. (must match Emission Units Table): 2-9C

Equipment Information

1. Manufacturer: GFS Model No. ***ACDW-251019-PSB-3F-S***	***2.*** Control Device Name: Booth Filter Type:3-Stage NESHAP Filter – ***See filter cut sheets***
3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency. ***See Appendix A. This is typical for 2-19S (Booth 100) and 2-20S (Booth 200)***	
4. On a separate sheet(s) supply all data and calculations used in selecting or designing this collection device. ***See Appendix A. This is typical for 2-19S (Booth 100) and 2-20S (Booth 200)***	
5. Provide a scale diagram of the control device showing internal construction. ***See Appendix A. This is typical for 2-19S (Booth 100) and 2-20S (Booth 200)***	
6. Submit a schematic and diagram with dimensions and flow rates. ***See Appendix A. This is typical for 2-19S (Booth 100) and 2-20S (Booth 200)***	
7. Guaranteed minimum collection efficiency for each pollutant collected: >95% for 2 micron ***See Appendix A. See filter cut sheet for independent testing report***	
8. Attached efficiency curve and/or other efficiency information. ***See filter cut sheet for independent testing report***	
9. Design inlet volume: ***25,000*** SCFM	10. Capacity: ***Not defined***
11. Indicate the liquid flow rate and describe equipment provided to measure pressure drop and flow rate, if any. ***Not applicable***	
12. Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment. ***None.***	
13. Description of method of handling the collected material(s) for reuse of disposal. ***Filters will be collected in a cubic yard box with other rags and paint contaminated materials to be shipped to a licensed hazardous waste TSDF for treatment.***	

Gas Stream Characteristics

14. Are halogenated organics present?	☐ Yes	☒ No
Are particulates present?	☒ Yes	☐ No
Are metals present?	☒ Yes	☐ No

15. Inlet Emission stream parameters:	Maximum	Typical
Pressure (mmHg):		760
Heat Content (BTU/scf):		

Oxygen Content (%):		
Moisture Content (%):		
Relative Humidity (%):		40

16. Type of pollutant(s) controlled: ☐ SO_x ☐ Odor
☒ Particulate (type): ***Paint Overspray*** ☐ Other

17. Inlet gas velocity: 7080 ft/sec

18. Pollutant specific gravity: varies

19. Gas flow into the collector:
ACF @ 68 °F and 14.9 PSIA

20. Gas stream temperature:
Inlet: 70 °F
Outlet: 70 °F

21. Gas flow rate:
Design Maximum: ***25,000*** ACFM
Average Expected: ***25,000*** ACFM

22. Particulate Grain Loading in grains/scf:
Inlet: 16.85
Outlet:0.014

23. Emission rate of each pollutant (specify) into and out of collector:

Pollutant	**IN Pollutant**		**Emission Capture Efficiency %**	**OUT Pollutant**		**Control Efficiency %**
	lb/hr	**grains/acf**		**lb/hr**	**grains/acf**	
A - VOC	31.35	36.57	0	31.35	36.57	0
B -PM	14.439	16.85	99.5	0.012	0.014	95.2
C						
D						
E						

24. Dimensions of stack: Height ***44'-7"*** ft. Diameter **3.5** ft.

Exhaust Discharge Point and Design Currently under review (7-12-21). Alternate solution has stack terminations at 16'-6" above grade.

25. Supply a curve showing proposed collection efficiency versus gas volume from 25 to 130 percent of design rating of collector. ***See Appendix A***

Particulate Distribution

26. Complete the table:

Particulate Size Range (microns)	**Particle Size Distribution at Inlet to Collector** **Weight % for Size Range**	**Fraction Efficiency of Collector** **Weight % for Size Range** ***(Taken from XFP6000 test data)***
0 – 2	***See Appendix A***	***99.4***
2 – 4		***99.8***
4 – 6		***100***
6 – 8		***100***
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		

80 – 90		
90 – 100		
>100		

27. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):

Not Applicable

28. Describe the collection material disposal system:
Filters will be collected in a cubic yard box with other rags and paint contaminated materials to be shipped to a licensed hazardous waste TSDF for treatment.

29. Have you included ***Other Collectors Control Device*** in the Emissions Points Data Summary Sheet?

30. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING: A magnhelic will be installed on the booth to check the pressure drop across the filters. Operating procedures shall include language that requires the magnahelic be checked prior to use to ensure that the system is running at adequate draw and the checks to be recorded.	RECORDKEEPING: ***Filters will be checked daily prior to spraying operations. Magnahelic and filter checks will be recorded each day and records will be maintained for five years.***
REPORTING: ***Emissions from this process shall be reported annually as part of the annual emissions inventory submitted by April 1 of each year.***	TESTING: ***If testing is required by the Director, it will be conducted using the required EPA methods.***

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

31. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
95.2%

32. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
95.2%

33. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
None specified.

Attachment M
Air Pollution Control Device Sheet
(OTHER COLLECTORS)

Control Device ID No. (must match Emission Units Table): 2-10C

Equipment Information

1. Manufacturer: GFS Model No. ***ACDW-251019-PSB-3F-S***	***2.*** Control Device Name: Booth Filter Type:3-Stage NESHAP Filter – ***See filter cut sheets***
3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency. ***See Appendix A. This is typical for 2-19S (Booth 100) and 2-20S (Booth 200)***	
4. On a separate sheet(s) supply all data and calculations used in selecting or designing this collection device. ***See Appendix A. This is typical for 2-19S (Booth 100) and 2-20S (Booth 200)***	
5. Provide a scale diagram of the control device showing internal construction. ***See Appendix A. This is typical for 2-19S (Booth 100) and 2-20S (Booth 200)***	
6. Submit a schematic and diagram with dimensions and flow rates. ***See Appendix A. This is typical for 2-19S (Booth 100) and 2-20S (Booth 200)***	
7. Guaranteed minimum collection efficiency for each pollutant collected: >95% for 2 micron ***See Appendix A. See filter cut sheet for independent testing report***	
8. Attached efficiency curve and/or other efficiency information. ***See filter cut sheet for independent testing report***	
9. Design inlet volume: ***25,000*** SCFM	10. Capacity: ***Not defined***
11. Indicate the liquid flow rate and describe equipment provided to measure pressure drop and flow rate, if any. ***Not applicable***	
12. Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment. ***None.***	
13. Description of method of handling the collected material(s) for reuse of disposal. ***Filters will be collected in a cubic yard box with other rags and paint contaminated materials to be shipped to a licensed hazardous waste TSDF for treatment.***	

Gas Stream Characteristics

14. Are halogenated organics present?	☐ Yes	☒ No
Are particulates present?	☒ Yes	☐ No
Are metals present?	☒ Yes	☐ No

15. Inlet Emission stream parameters:	**Maximum**	**Typical**
Pressure (mmHg):		760
Heat Content (BTU/scf):		

Oxygen Content (%):		
Moisture Content (%):		
Relative Humidity (%):		40

16. Type of pollutant(s) controlled: ☐ SO_x ☐ Odor
☒ Particulate (type): ***Paint Overspray*** ☐ Other

17. Inlet gas velocity: 7080 ft/sec

18. Pollutant specific gravity: varies

19. Gas flow into the collector:
ACF @ 68 °F and 14.9 PSIA

20. Gas stream temperature:
Inlet: 70 °F
Outlet: 70 °F

21. Gas flow rate:
Design Maximum: ***25,000*** ACFM
Average Expected: ***25,000*** ACFM

22. Particulate Grain Loading in grains/scf:
Inlet: 16.85
Outlet:0.014

23. Emission rate of each pollutant (specify) into and out of collector:

Pollutant	**IN Pollutant**		**Emission Capture Efficiency %**	**OUT Pollutant**		**Control Efficiency %**
	lb/hr	**grains/acf**		**lb/hr**	**grains/acf**	
A - VOC	21.26	24.80	0	21.26	24.80	0
B -PM	4.364	5.09	99.5	0.218	0.255	95.2
C						
D						
E						

24. Dimensions of stack: Height ***44'-7"*** ft. Diameter **3.5** ft.

Exhaust Discharge Point and Design Currently under review (7-12-21). Alternate solution has stack terminations at 16'-6" above grade.

25. Supply a curve showing proposed collection efficiency versus gas volume from 25 to 130 percent of design rating of collector. ***See Appendix A***

Particulate Distribution

26. Complete the table:

Particulate Size Range (microns)	**Particle Size Distribution at Inlet to Collector** **Weight % for Size Range**	**Fraction Efficiency of Collector** **Weight % for Size Range** ***(Taken from XFP6000 test data)***
0 – 2	***See Appendix A***	***99.4***
2 – 4		***99.8***
4 – 6		***100***
6 – 8		***100***
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		

80 – 90		
90 – 100		
>100		

27. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):

Not Applicable

28. Describe the collection material disposal system:
Filters will be collected in a cubic yard box with other rags and paint contaminated materials to be shipped to a licensed hazardous waste TSDF for treatment.

29. Have you included ***Other Collectors Control Device*** in the Emissions Points Data Summary Sheet?

30. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING: A magnhelic will be installed on the booth to check the pressure drop across the filters. Operating procedures shall include language that requires the magnahelic be checked prior to use to ensure that the system is running at adequate draw and the checks to be recorded.	RECORDKEEPING: ***Filters will be checked daily prior to spraying operations. Magnahelic and filter checks will be recorded each day and records will be maintained for five years.***
REPORTING: ***Emissions from this process shall be reported annually as part of the annual emissions inventory submitted by April 1 of each year.***	TESTING: ***If testing is required by the Director, it will be conducted using the required EPA methods.***

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

31. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
95.2%

32. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
95.2%

33. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
None specified.

Attachment N

		Emissions Per Lot of 12 Units						Emissions Per Hour						Emissions Per Year				
		lb VOC emitted	lb HAP VOC emitted	Lb PM uncont	lb PM emitted*	lb HAP PM emitted*	Hours Per Lot	lb VOC emitted	lb HAP VOC emitted	lb PM uncont	lb PM cont emitted*	lb HAP PM emitted*	Max Lots Per Year	lb VOC emitted	lb HAP VOC emitted	lbs PM uncont	lb PM emitted*	lb HAP PM emitted*
2-16E	**VOC**	49.77						**31.35**						1120.39				
2-16E	1,2,4-TMB	0.16						**0.08**						3.11				
2-16E	1,3,5-TMB	0.04						**0.02**						1.09				
2-16E	2-EHA	3.04						**3.04**						91.23				
2-16E	Barium chromate					0.0008						**0.0004**						0.0231
2-16E	Butanol	0.09						**0.05**						2.76				
2-16E	Butyl acetate	6.11						**3.40**						92.41				
2-16E	Chromium cmpd					0.0054						**0.0054**						0.1614
2-16E	Cyclohexanone	0.30						**0.15**						9.02				
2-16E	Ethanol	0.34						**0.17**						10.22				
2-16E	Ethyl acetate	0.18						**0.09**						5.43				
2-16E	Ethyl benzene	0.03						**0.11**						6.29				
2-16E	IPA	11.21						**5.60**						336.19				
2-16E	Lt. Arom. HC	0.16						**0.08**						3.21				
2-16E	MAK	15.15						**9.69**						306.58				
2-16E	MEK	3.00						**1.50**						17.09				
2-16E	Methanol	0.02						**0.01**						0.50				
2-16E	Methyl acetate	2.15						**2.15**						64.55				
2-16E	MIBK	2.41						**1.21**						72.37				
2-16E	PGMEA	0.55						**0.27**						1.64				
2-16E	Strontium chromate					0.0100						**0.0050**						0.3006
2-16E	Toluene	0.11						**0.05**						0.33				
2-16E	Xylene	0.97						**0.59**						11.24				
2-16E	Zinc chromate					0.0022						**0.0011**						0.0660
2-16E	**PM**			24.155	1.208	0.019				**14.439**	**0.722**	**0.012**				454.867	22.743	0.551
2-16E	Cr Cmpds			0.357	0.018					**0.232**	**0.012**					10.698	0.535	
2-16E	**HAP-VOC**														90.74			
2-16E	**HAP-PM**																	0.551
2-16E																		
2-17E	**VOC**	31.90						**21.26**						957.15				
2-17E	IPA	20.86						**10.43**						625.85				
2-17E	Varsol	0.43						**0.21**						12.83				
2-17E	Xylene	10.62	10.62					**10.62**	**10.62**					318.47				
2-17E	**PM**				0.2182					**4.3636**	**0.2182**					130.9091	6.5455	
2-17E	**HAP-VOC**														318.47			

Annual Total (lb/hr)	2077.54	409.20	585.7760	29.2888	0.551
Annual Total (lb/hr)	1.039	0.205	0.293	0.0146	0.00028

ATTACHMENT N
Emission Totals by Source

The total hourly emissions is artificially inflat
not likely that all operations will be conducte

												Emissions Per Lot of 12 Units						Emissions Per Hour			
Operation Step	Emission Point	Emission Description	Material	Gallons Emitted per Unit	Application Method		lb/gal	VOC%	VOC HAP%	PM%	PM HAP%	lb VOC emitted	lb HAP VOC emitted	Lb PM uncont	lb PM emitted*	lb HAP PM emitted*	Hours Per Lot	lb VOC emitted	lb HAP VOC emitted	lb PM uncont	lb PM cont emitted*
1	2-16E	Wipe Clean Units	IPA	0.13203	Wipe	IPA	6.58	100.0%	0.0%	0.0%	0.0%	10.43	0.00	0.000	0.000	0.000	2	5.22	0.00	0.000	0.000
2	2-16E	Apply Sealant Primer	PR-182 or PR-188*	0.00004	Brush	No criteria	8.35	0.0%	0.0%	97.0%	0.0%	0.00	0.00	0.000	0.000	0.000	2	0.00	0.00	0.000	0.000
3	2-16E	Apply Sealant 1	PR-2001 B-2 or PR-1826 Class B**	0.00316	Brush		11.99	0.1%	0.0%	99.9%	0.0%	0.0005	0.00	0.000	0.000	0.000	2	0.00	0.00	0.000	0.000
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119	Spray		7.20	84.3%	2.3%	6.9%	4.6%	0.82	0.02	0.067	0.003	0.002	2	0.41	0.01	0.033	0.002
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119		Butanol	7.20	9.5%				0.09					2	0.05			
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119		Ethanol	7.20	35.3%				0.34					2	0.17			
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119		IPA	7.20	37.1%				0.36					2	0.18			
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119		Methanol	7.20	1.5%	1.5%			0.01	0.01				2	0.01	0.01		
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119		MIBK	7.20	0.8%	0.8%			0.01	0.01				2	0.00	0.00		
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119		Zinc chromate	7.20			4.6%	4.6%	0.00		0.044	0.002	0.002	2			0.022	0.001
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361	Spray		8.59	67.1%	56.1%	14.8%	4.9%	2.33	1.94	0.513	0.026	0.008	2	1.16	0.97	0.256	0.013
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		MIBK	8.59	53.4%	53.4%			1.85	1.85				2	0.93	0.93		
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		Cyclohexanone	8.59	6.7%				0.23					2	0.12			
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		Ethyl benzene	8.59	0.4%	0.4%			0.01	0.01				2	0.01	0.01		
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		MEK	8.59	6.7%				0.23					2	0.12			
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		Xylene	8.59	2.2%	2.2%			0.08	0.08				2	0.04	0.04		
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		Barium chromate	8.59			0.4%	0.4%			0.015	0.001	0.001	2			0.008	0.000
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		Strontium chromate	8.59			4.5%	4.5%			0.154	0.008	0.008	2			0.077	0.004
14	2-16E	Apply Surface Promoter 2	Dowsil Q1-2650	0.00558	Spray		6.72	93.5%	0.5%	0.0%	0.0%	0.42	0.00	0.000	0.000	0.000	2	0.211	0.001	0.000	0.000
14	2-16E	Apply Surface Promoter 2	Dowsil Q1-2650	0.00558		IPA	6.72	92.5%				0.42					2	0.208			
14	2-16E	Apply Surface Promoter 2	Dowsil Q1-2650	0.00558		Methanol	6.72	0.5%				0.00	0.00				2	0.001	0.000		
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009	Spray		8.59	67.1%	56.1%	14.8%	4.9%	0.70	0.58	0.154	0.008	0.003	2	0.35	0.29	0.077	0.004
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		MIBK	8.59	53.4%	53.4%			0.55	0.55				2	0.28	0.28		
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		Cyclohexanone	8.59	6.7%				0.07					2	0.03			
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		Ethyl benzene	8.59	0.4%	0.4%			0.00	0.00				2	0.00	0.00		
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		MEK	8.59	6.7%				0.07					2	0.03			
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		Xylene	8.59	2.2%	2.2%			0.02	0.02				2	0.01	0.01		
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		Barium chromate	8.59			0.4%	0.4%			0.005	0.000	0.0002	2			0.002	0.000
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		Strontium chromate	8.59			4.5%	4.5%			0.046	0.002	0.002	2			0.023	0.001
16	2-16E	Apply Top Coat - Gray	MIL-P-85285 #36375 - H	0.44810	Spray		9.26	3.8%	0.0%	15.8%	0.0%	1.87	0.00	7.838	0.392	0.000	2	0.93	0.00	3.919	0.196
16	2-16E	Apply Top Coat - Gray	MIL-P-85285 #36375 - H	0.44810		Butyl acetate	9.26	3.8%				1.87					2	0.93			
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125	Spray		9.56	48.3%	0.8%	19.5%	0.8%	6.92	0.12	2.797	0.140	0.005	1	6.92	0.12	2.797	0.140
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125		Butyl acetate	9.56	2.5%				0.36					1	0.36			
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125		Ethyl benzene	9.56	0.1%	0.1%			0.01	0.01				1	0.01	0.01		
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125		MAK	9.56	22.5%				3.23					1	3.23			
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125		Methyl acetate	9.56	15.0%				2.15					1	2.15			
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125		Xylene	9.56	0.8%	0.8%			0.11	0.11				1	0.11	0.11		

Emission Totals by Source

The total hourly emissions is artificially inflate
not likely that all operations will be conducte

												Emissions Per Lot of 12 Units						Emissions Per Hour			
Operation Step	Emission Point	Emission Description	Material	Gallons Emitted per Unit	Application Method		lb/gal	VOC%	VOC HAP%	PM%	PM HAP%	lb VOC emitted	lb HAP VOC emitted	Lb PM uncont	lb PM emitted*	lb HAP PM emitted*	Hours Per Lot	lb VOC emitted	lb HAP VOC emitted	lb PM uncont	lb PM cont emitted*
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125		Chrome cmpd	9.56			0.8%	0.8%			0.108	0.005	0.005	1			0.108	0.005
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125	Spray		9.66	44.7%	0.0%	6.0%	0.0%	6.47	0.00	0.869	0.043	0.000	2	3.24	0.00	0.434	0.022
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		1,2,4-TMB	9.66	0.7%				0.10					2	0.05			
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		1,3,5-TMB	9.66	0.3%				0.04					2	0.02			
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		Butyl acetate	9.66	1.3%				0.18					2	0.09			
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		Ethyl acetate	9.66	1.3%				0.18					2	0.09			
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		Lt. Arom. HC	9.66	0.7%				0.10					2	0.05			
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		MAK	9.66	37.5%				5.43					2	2.72			
16c	2-16E	Apply Markings - Black	MIL-P-85285 #37038 - H	0.125	Spray		9.01	44.5%	0.8%	14.3%	0.0%	6.01	0.10	1.926	0.096	0.000	1	6.01	0.10	1.926	0.096
16c	2-16E	Apply Markings - Black	MIL-P-85285 #37038 - H	0.125		2-EHA	9.01	22.5%				3.04					1	*3.04*			
16c	2-16E	Apply Markings - Black	MIL-P-85285 #37038 - H	0.125		Butyl acetate	9.01	2.5%				0.34					1	0.34			
16c	2-16E	Apply Markings - Black	MIL-P-85285 #37038 - H	0.125		MAK	9.01	7.5%				1.01					1	1.01			
16c	2-16E	Apply Markings - Black	MIL-P-85285 #37038 - H	0.125		Xylene	9.01	0.8%				0.10	0.00				1	0.10	0.00		
16d	2-16E	Apply Markings - Red***	MIL-P-85285 #38913 - C	0.125	Spray		9.12	33.2%	2.9%	18.8%	0.0%	4.54	0.39	2.564	0.128	0.000	2	2.268	0.19	1.282	0.064
16d	2-16E	Apply Markings - Red***	MIL-P-85285 #38913 - C	0.125		Butyl acetate	9.12	13.1%				1.79					2	0.897			
16d	2-16E	Apply Markings - Red***	MIL-P-85285 #38913 - C	0.125		MAK	9.12	13.5%				1.85					2	0.923			
16d	2-16E	Apply Markings - Red***	MIL-P-85285 #38913 - C	0.125		MEK	9.12	3.8%				0.51					2	0.256			
16d	2-16E	Apply Markings - Red***	MIL-P-85285 #38913 - C	0.125		Xylene	9.12	2.5%				0.34					2	0.171			
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125	Spray		9.72	35.7%	0.8%	30.9%	0.0%	5.21	0.11	4.506	0.225	0.000	2	2.605	0.05	2.253	0.113
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		1,2,4-TMB	9.72	0.4%				0.06					2	0.029			
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		Butyl acetate	9.72	0.8%				0.11					2	0.055			
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		Lt. Arom. HC	9.72	0.4%				0.05					2	0.027			
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		MAK	9.72	9.4%				1.37					2	0.684			
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		MEK	9.72	15.0%				2.19					2	1.094			
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		PGMEA	9.72	3.8%				0.55					2	0.273			
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		Toluene	9.72	0.8%				0.11	0.00				2	0.055	0.00		
16f	2-16E	Apply Markings - Blue***	MIL-P-85285 #35109 - C	0.125	Spray		8.38	32.3%	2.9%	23.3%	0.0%	4.06	0.36	2.923	0.146	0.000	2	2.028	0.18	1.461	0.073
16f	2-16E	Apply Markings - Blue***	MIL-P-85285 #35109 - C	0.125		Butyl acetate	8.38	11.6%				1.46					2	0.731			
16f	2-16E	Apply Markings - Blue***	MIL-P-85285 #35109 - C	0.125		MAK	8.38	18.0%				2.26					2	1.131			
16f	2-16E	Apply Markings - Blue***	MIL-P-85285 #35109 - C	0.125		Xylene	8.38	2.5%				0.31	0.00				2	0.157	0.00		
6	2-17E	Apply Masks	Paper	0	NA																
7	2-17E	Apply Surface Promoter 1	SS4155 Primer	0.00558	Wipe		6.76	94.4%	0.0%	5.6%	0.0%	0.43	0.00	0.000	0.000	0.000	2	0.21	0.00	0.00	0.00
7	2-17E	Apply Surface Promoter 1	SS4155 Primer	0.00558		Varsol	6.76	94.4%				0.43					2	0.21			
8	2-17E	Apply Sealant 2 - 1st Coat	PR-9921	0.14939	Brush		7.52	70.0%	70.0%	0.0%	0.0%	9.44	9.44	0.000	0.000	0.000	1	9.44	9.44	0.00	0.00
8	2-17E	Apply Sealant 2 - 1st Coat	PR-9921	0.14939		Xylene	7.52	70.0%				9.44	9.44				1	9.44	9.44		
9	2-17E	Sand	PM	0.04329	Sand		8.00	0.0%	0.0%	100.0%	0.0%	0.00	0.00	4.156	0.208	0.000	1	0.00	0.00	4.16	0.21
10	2-17E	Wipe Clean Units after Sanding	IPA	0.13203	Wipe	IPA	6.58	100.0%	0.0%	0.0%	0.0%	10.43	0.00	0.000	0.000	0.000	2	5.22	0.00	0.00	0.00
11	2-17E	Apply Sealant 2 - 2nd Coat	PR-9921	0.01866	Brush		7.52	70.0%	70.0%	0.0%	0.0%	1.18	1.18	0.000	0.000	0.000	1	1.18	1.18	0.00	0.00
11	2-17E	Apply Sealant 2 - 2nd Coat	PR-9921	0.01866		Xylene	7.52	70.0%				1.18	1.18				1	1.18	1.18		
12	2-17E	Sand	PM	0.00216	Sand		8.00	0.0%	0.0%	100.0%	0.0%	0.00	0.00	0.208	0.010	0.000	1	0.00	0.00	0.21	0.01
13	2-17E	Wipe Clean Units after Sanding	IPA	0.13203	Wipe	IPA	6.58	100.0%	0.0%	0.0%	0.0%	10.43	0.00	0.000	0.000	0.000	2	5.22	0.00	0.00	0.00

* PR-182 is preferred, PR-182 is used in calculations due to higher PM content. Both materials are 0% VOC

** PR-2001 B-2 is preferred

***Red, Green, and Blue markings will only be applied on special variant motors (i.e. inerts, etc.

Controlled PM emissions include an overspray factor of 50% with 90% filter efficiency.

ATTACHMENT I

Emission Totals by S

ed because it is a total of all operations. It is
d at the same time

							Emissions Per Year				
Operation Step	Emission Point	Emission Description	Material	Gallons Emitted per Unit	lb HAP PM emitted*	Max Lots Per Year	lb VOC emitted	lb HAP VOC emitted	lbs PM uncont	lb PM emitted*	lb HAP PM emitted*
1	2-16E	Wipe Clean Units	IPA	0.13203	0.000	30	312.93	0.00	0.00	0.00	0.00
2	2-16E	Apply Sealant Primer	PR-182 or PR-188*	0.00004	0.000	30	0.00	0.00	0.00	0.00	0.00
3	2-16E	Apply Sealant 1	PR-2001 B-2 or PR-1826 Class B**	0.00316	0.000	30	0.01	0.00	0.00	0.00	0.00
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119	0.001	30	24.45	0.67	2.00	0.10	0.07
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119		30	2.76				
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119		30	10.22				
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119		30	10.77				
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119		30	0.44	0.44			
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119		30	0.22	0.22			
4	2-16E	Surface Prep	MIL-C-8514 (Randolph or SW)	0.01119	0.001	30			1.32	0.07	0.07
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361	0.004	30	69.78	58.28	15.38	0.77	0.25
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		30	55.50	55.50			
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		30	6.94				
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		30	0.42	0.42			
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		30	6.91				
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361		30	2.31	2.31			
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361	0.000	30			0.46	0.02	0.02
5	2-16E	Apply Primer - 1st Coat	TS12983 Primer	0.03361	0.004	30			4.63	0.23	0.23
14	2-16E	Apply Surface Promoter 2	Dowsil Q1-2650	0.00558	0.000	30	12.63	0.07	0.00	0.00	0.00
14	2-16E	Apply Surface Promoter 2	Dowsil Q1-2650	0.00558		30	12.50				
14	2-16E	Apply Surface Promoter 2	Dowsil Q1-2650	0.00558		30	0.07	0.00			
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009	0.001	30	20.93	17.48	4.61	0.23	0.08
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		30	16.65	16.65			
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		30	2.08				
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		30	0.12	0.12			
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		30	2.07				
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009		30	0.69	0.69			
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009	0.000	30			0.14	0.01	0.01
15	2-16E	Apply Primer - 2nd Coat	TS12983 Primer	0.01009	0.001	30			1.39	0.07	0.07
16	2-16E	Apply Top Coat - Gray	MIL-P-85285 #36375 - H	0.44810	0.000	30	55.99	0.00	235.14	11.76	0.00
16	2-16E	Apply Top Coat - Gray	MIL-P-85285 #36375 - H	0.44810		30	55.99				
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125	0.005	30	207.63	3.55	83.91	4.20	0.16
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125		30	10.76				
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125		30	0.32	0.32			
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125		30	96.82				
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125		30	64.55				
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125		30	3.23	3.23			

Emission Totals by S

ed because it is a total of all operations. It is
d at the same time

Operation Step	Emission Point	Emission Description	Material	Gallons Emitted per Unit	lb HAP PM emitted*	Max Lots Per Year	Emissions Per Year: lb VOC emitted	lb HAP VOC emitted	lbs PM uncont	lb PM emitted*	lb HAP PM emitted*
16a	2-16E	Apply Markings - Yellow	MIL-P-85285 #33538 - H	0.125	0.005	30			3.23	0.16	0.16
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125	0.000	30	194.21	0.00	26.07	1.30	0.00
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		30	2.93				
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		30	1.09				
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		30	5.43				
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		30	5.43				
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		30	3.04				
16b	2-16E	Apply Markings - Brown	MIL-P-85285 #30117 - SW	0.125		30	162.93				
16c	2-16E	Apply Markings - Black	MIL-P-85285 #37038 - H	0.125	0.000	30	180.43	3.04	57.78	2.89	0.00
16c	2-16E	Apply Markings - Black	MIL-P-85285 #37038 - H	0.125		30	91.23				
16c	2-16E	Apply Markings - Black	MIL-P-85285 #37038 - H	0.125		30	10.14				
16c	2-16E	Apply Markings - Black	MIL-P-85285 #37038 - H	0.125		30	30.41				
16c	2-16E	Apply Markings - Black	MIL-P-85285 #37038 - H	0.125		30	3.04	0.00			
16d	2-16E	Apply Markings - Red***	MIL-P-85285 #38913 - C	0.125	0.000	3	13.61	1.17	7.69	0.38	0.00
16d	2-16E	Apply Markings - Red***	MIL-P-85285 #38913 - C	0.125		3	5.38				
16d	2-16E	Apply Markings - Red***	MIL-P-85285 #38913 - C	0.125		3	5.54				
16d	2-16E	Apply Markings - Red***	MIL-P-85285 #38913 - C	0.125		3	1.54				
16d	2-16E	Apply Markings - Red***	MIL-P-85285 #38913 - C	0.125		3	1.03				
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125	0.000	3	15.63	0.33	13.52	0.68	0.00
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		3	0.18				
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		3	0.33				
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		3	0.16				
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		3	4.10				
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		3	6.56				
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		3	1.64				
16e	2-16E	Apply Markings - Green***	MIL-P-85285 #34230 - C	0.125		3	0.33	0.00			
16f	2-16E	Apply Markings - Blue***	MIL-P-85285 #35109 - C	0.125	0.000	3	12.17	1.07	8.77	0.44	0.00
16f	2-16E	Apply Markings - Blue***	MIL-P-85285 #35109 - C	0.125		3	4.38				
16f	2-16E	Apply Markings - Blue***	MIL-P-85285 #35109 - C	0.125		3	6.79				
16f	2-16E	Apply Markings - Blue***	MIL-P-85285 #35109 - C	0.125		3	0.94	0.00			
6	2-17E	Apply Masks	Paper	0							
7	2-17E	Apply Surface Promoter 1	SS4155 Primer	0.00558	0.00	30	12.83	0.00	0.00	0.00	0.00
7	2-17E	Apply Surface Promoter 1	SS4155 Primer	0.00558		30	12.83				
8	2-17E	Apply Sealant 2 - 1st Coat	PR-9921	0.14939	0.00	30	283.11	283.11	0.00	0.00	0.00
8	2-17E	Apply Sealant 2 - 1st Coat	PR-9921	0.14939		30	283.11	283.11			
9	2-17E	Sand	PM	0.04329	0.00	30	0.00	0.00	124.68	6.23	0.00
10	2-17E	Wipe Clean Units after Sanding	IPA	0.13203	0.00	30	312.93	0.00	0.00	0.00	0.00
11	2-17E	Apply Sealant 2 - 2nd Coat	PR-9921	0.01866	0.00	30	35.36	35.36	0.00	0.00	0.00
11	2-17E	Apply Sealant 2 - 2nd Coat	PR-9921	0.01866		30	35.36	35.36			
12	2-17E	Sand	PM	0.00216	0.00	30	0.00	0.00	6.23	0.31	0.00
13	2-17E	Wipe Clean Units after Sanding	IPA	0.13203	0.00	30	312.93	0.00	0.00	0.00	0.00

* PR-182 is preferred, PR-182 is used in
** PR-2001 B-2 is preferred
***Red, Green, and Blue markings will
Controlled PM emissions include an ove

ATTACHMENT O
MONITORING, RECORDKEEPING, REPORTING AND TESTING PLAN

Monitoring

2-19S (2-16E; 2-9C); 2-20S (2-17E; 2-10C)
Each of these units are spray booths with 3-stage filters for control of particulate matter (PM). Each unit is designed as a self-contained unit that monitors air filter pressure drop on a stage-by-stage basis. GFS' filter monitoring frame is designed to fit within an existing exhaust filter bank framework. Housing each filter within this unit allows multiple access tubes to be permanently mounted between each of these stages to monitor individual pressure drops.
Manual or electronic magnahelic gauges are connected for data collection. Pressure is taken at each of the three stages. Magnahelic gages located near the booth display the filter pressure. This allows filters to be changed consistently at appropriate pressure drops, ensuring emission standards compliance, quality paint finishes and filter longevity. Optional transmitter is available for data logging applications. See Appendix A for additional information regarding filter systems. Operating procedures for each piece of equipment will include language that require the manometers or gauges be checked prior to use to ensure that the system is running at adequate draw and the checks to be recorded.

Recordkeeping

Engineering estimates from development motors are available for units that will be manufactured. There are multiple processes being conducted in each of the two booths. These operations may be conducted in various combinations dependent upon the production cycle. This mode of operations makes it extremely difficult to calculate particular hourly rates. The most efficient way to track emissions is tracking the number of units processed through each operational step and calculating emissions based on known emission rates multiplied by the number of units processed each day. We are proposing recordkeeping per the table below for each source. Record keeping forms have been generated for each operational step and are attached to this plan (Appendix B). The AARGM-ER program will be using a production software system called Solumina. The program is an electronic system that replaces hard copy operating procedures and hand written records for production. The forms that are attached indicate what data must be tracked, but the daily production floor input will be entered into the Solumina system rather than hand written sheets. Reports will be run on a monthly basis to allow for emissions calculations at the end of each month. Monthly totals will be rolled up into 12 month rolling totals for each emission point.

Magnahelic gauges on exhausts for 2-19S and 2-20S will be checked to ensure adequate air flow each day prior to use and the checks shall be recorded as part of the Daily Filter Check Records.

Daily Filter Checks will be made to ensure that filters are in place and in good condition prior to any spray operations in 2-19S or 2-20S. These will be completed to ensure compliance with visible emission requirements. See form in attached Record Forms file.

Records of any maintenance performed on the exhaust systems for the two booths will be recorded in the facility maintenance software (Leading to Lean).

Processing hours for each operational step have been estimated based on program development of single units at a sister facility in California. Actual hours may be slightly higher or lower than those estimated in the permit application.

Records to be Maintained

Emission Source ID	Emission Point ID	Records
2-19S	2-16E	Daily records of the number of units wipe cleaned with IPA and processing times (Step 1). Daily records of the number of units coated with PR Sealant and processing times (Step 3). Daily records of the number of units coated with MIL-C-8514 Primer and processing times (Step 4). Daily records of the number of units coated with first coat of TS12983 Primer and processing times (Step 5). Daily records of the number of units coated with Dowsil Q1-2650 and processing times (Step 14). Daily records of the number of units coated with second coat of TS12983 Primer and processing times (Step 15). Daily records of the number of units coated with MIL-PRF-85285 Gray Urethane and processing times (Step 16). Daily records of the number of units coated with MIL-PRF-85285 Yellow Urethane and processing times (Step 16A). Daily records of the number of units coated with MIL-PRF-85285 Brown Urethane and processing times (Step 16B). Daily records of the number of units coated with MIL-PRF-85285 Black Urethane and processing times (Step 16C). Daily records of the number of units coated with MIL-PRF-85285 Red Urethane and processing times (Step 16D). Daily records of the number of units coated with MIL-PRF-85285 Green Urethane and processing times (Step 16E). Daily records of the number of units coated with MIL-PRF-85285 Blue Urethane and processing times (Step 16F).
2-20S	2-17E	Daily records of the number of units coated with SS4155 Primer and processing times (Step 7). Daily records of the number of units coated with first coat PR-9921 Sealant and processing times (Step 8). Daily records of the number of units sanded after first sealant coat and processing times (Step 9). Daily records of the number of units wipe cleaned with IPA after first sealing/sanding and processing times (Step 10). Daily records of the number of units coated with second coat PR-9921 Sealant and processing times (Step 11). Daily records of the number of units sanded after second sealant coat and processing times (Step 12). Daily records of the number of units wipe cleaned with IPA after second sealing/sanding and processing times (Step 13).

Reporting
Emissions from all emission points associated with this permit will be included in the Annual Emissions Inventory submitted by April 1 of each year.

Testing
None.

Proposed Emission Limits Table

Emission Point ID	Pollutant	Annual Emissions (lb/yr)
2-16E	VOC PM HAP	1121 23 92
2-17E	VOC PM HAP	958 7 319
TOTAL	**VOC** **PM** **HAP**	**2,079** **30** **411**

Northrop Grumman Corporation
Defense Systems Group
Alliant Techsystems Operations LLC
ABL Operations
210 State Route 956
Rocket Center. WV 26726

August 30, 2021

Mineral Daily News-Tribune
21 Shamrock Dr.
Keyser, WV 26726

Attn: Legal Ad Department

Please run the enclosed legal notice for 1 day as required by the WV Division of Air Quality and forward a copy of the affidavit of publication to me. If possible, could you please expedite its printing?

Thank you.

Sincerely,

Sue Ell Foor

Sue Ellen Foor
Environmental Engineer
Alliant Techsystems Operations LLC
Allegany Ballistics Laboratory

cc: Chris Scanlan

Northrop Grumman Corporation
Defense Systems Group
Alliant Techsystems Operations LLC
ABL Operations
210 State Route 956
Rocket Center. WV 26726

August 30, 2021

Notice is given that Alliant Techsystems Operations LLC – ABL Operations (a division of Northrop Grumman) has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Construction Permit to add a new rocket motor preparation operation at its facility located on 210 State Route, near Keyser in Mineral County, West Virginia. The latitude and longitude coordinates are: 39.561degress latitude, -78.833 degrees longitude.

The applicant estimates that the increased potential change to discharge the following Regulated Air Pollutants will be:
Volatile Organic Compounds (VOC) = 1.04 TPY
Hazardous Air Pollutant (HAP) = 0.205 TPY
Particulate Matter (PM) = 0.24 TPY (Uncontrolled) / 0.015 TPY (Controlled)

Startup of operation began on or about the January 1, 2021. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, West Virginia, 25304, for at least 30 days calendar days from the date of publication of this notice. Written comments will also be received via email at DEPAirQualityPermitting@WV.gov.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 41281, during normal business hours.
Dated this the 30th day of August, 2021.

By: Northrop Grumman
Alliant Techsystems Operations LLC – ABL Operations
Robert Hadra
Director – Safety & SFPMO
210 State Route 956
Rocket Center, West Virginia 26726-3548

Attachment S

Title V Permit Revision Information

1. New Applicable Requirements Summary	
Mark all applicable requirements associated with the changes involved with this permit revision:	
☐ SIP	☐ FIP
☒ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☒ NESHAP (45CSR15)	☐ Nonattainment NSR (45CSR19)
☐ Section 111 NSPS (Subpart(s)_____)	☐ Section 112(d) MACT standards (Subpart(s)_____)
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☒ 45CSR27 State enforceable only rule
☐ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ Compliance Assurance Monitoring (40CFR64) [1]
☐ NO_x Budget Trading Program Non-EGUs (45CSR1)	☐ NO_x Budget Trading Program EGUs (45CSR26)
[1] If this box is checked, please include **Compliance Assurance Monitoring (CAM) Form(s)** for each Pollutants Specific Emission Unit (PSEU) (See Attachment H to Title V Application). If this box is not checked, please explain why **Compliance Assurance Monitoring** is not applicable: There are no CAM requirements associated with this process.	

2. Non Applicability Determinations

List all requirements, which the source has determined not applicable to this permit revision and for which a permit shield is requested. The listing shall also include the rule citation and a rationale for the determination.

45CSR21– Regulation to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds. The facility is not located in a county that is currently subject to 45CSR21, and is therefore currently exempt from this regulation.

40CFR63, Subpart GG, Section 63.745 – National Emission Standards for Aerospace Manufacturing Operations. The painting operations at this facility are exempted from Section 63.745 Primer and Topcoat operations because Specialty Coatings (definition per 63. 742) are used for all painting operations. Specialty Coating applications are covered by Control Technology Guidelines (CTG) EPA-453/R-97-004 enacted under 45CSR21 for RACT control of VOCs. However, the facility is not located in an area that is subject to 45CSR21, and is therefore, not subject to any CTG guidelines for Specialty Coating application.

40CFR63, Subpart PPP – National Emission Standards for Polyether Polyol Production. The facility manufactures Terathane Polyethylene Glycol Block Copolymer (TPEG), which is a Polyether Polyol. However, the operation is exempted from this MACT because there are no HAPs used or generated during the manufacturing operation.

40CFR63, Subpart GGGGG – National Emission Standards for Site Remediation. The facility currently has one site under remediation for groundwater contamination. This site is a Superfund site and is thus exempt from the MACT requirements. The facility also has a second site, which will begin remediation as part of a RCRA corrective action program within the next year. This second site would also be exempted since it is being conducted under a RCRA corrective action permit. In addition, neither site would generate emissions of more than 1 megagram per year of HAPs.

40CFR63, Subpart PPPPP – National Emission Standards for Hazardous Air Pollutants from Engine Test Sells/Stands (05/27/03)- This rule applies to the X-Range Static Rocket Motor Firing facility (Group 00Q). However, per 40CFR63.9290(b) & (d)(2) it is exempt from the requirements of this Subpart due to facility was existing source on May 14, 2002 (partially modified in summer of 2002, Source Q-3S) and also, it is used exclusively for rocket motors testing.

40CFR63, Subpart WWWWW – National Emission Standards for Reinforced Plastic Composites Manufacturing. the facility manufactures composite based rocket motor chambers and aircraft components. However, the facility is exempt from this MACT because none of the resin or fiber systems used, contain HAPs.

☒ **Permit Shield Requested** *(not applicable to Minor Modifications)*

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

3. Suggested Title V Draft Permit Language

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision? ☐ Yes ☒ No If Yes, describe the changes below.

Also, please provide **Suggested Title V Draft Permit language** for the proposed Title V Permit revision (including all applicable requirements associated with the permit revision and any associated monitoring /recordkeeping/ reporting requirements), OR attach a marked up pages of current Title V Permit. Please include appropriate citations (Permit or Consent Order number, condition number and/or rule citation (e.g. 45CSR§7-4.1)) for those requirements being added / revised.

See Attachment O –

4. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision		
Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
None		
	/ /	
	/ /	

5. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision		
Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
None		
	/ /	
	/ /	

6. Change in Potential Emissions	
Pollutant	Change in Potential Emissions (+ or -), TPY
VOC	0.14 TPY
HAP	0.16 TPY
PM	0.015 TPY
All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.	

7. **Certification For Use Of Minor Modification Procedures** ***(Required Only for Minor Modification Requests)***	
Note:	*This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows:*

i. Proposed changes do not violate any applicable requirement;

ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;

iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;

iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;

v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;

vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 45CSR§30-6.5.a.1.A. (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under 45CSR30.

Pursuant to 45CSR§30-6.5.a.2.C., the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 45CSR§30-6.5.a.1.A. The use of Minor permit modification procedures are hereby requested for processing of this application.

(Signed): _____ *(Please use blue ink)*	Date: _____ / _____ / ____ *(Please use blue ink)*
Named (typed): *Robert Hadra*	Title: *Dir. Safety & SFPMO – ABL Operations*

Note: Please check if the following included (if applicable):

☐	Compliance Assurance Monitoring Form(s)
☒	Suggested Title V Draft Permit Language (See Attachment O)

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

GLOBAL FINISHING SOLUTIONS

12731 Norway Road | Osseo, Wisconsin 54758
800-848-8738 | parts@globalfinishing.com
GLOBALFINISHING.COM

3-STAGE FILTRATION

Specifications — Products, Connections & Data Results

This overspray collection system is specifically designed for the collection of chromate coating overspray and diminishing the amount of dangerous chromium emissions up the exhaust stack.

This 3-stage system can be easily adapted to older 2-stage paint finishing lines.

Exceeds E.P.A Method 319 Emission Standard for Aerospace Manufacturing and Rework Facilities

1ST STAGE - Roll Media

Roll Media contains multi-layered polyester media. The air-entry side is constructed of a mixture of lofted denier fiber. The air-leaving side is comprised of a mixture of heavily needled media to densify. The air leaving side is jet-ink printed for identification and proper installation. Media weighs 1.2 oz per square foot.

GFS Part Numbers:

- 216-502, 36" X 50'
- 216-503, 45" X 50'

2ND STAGE - MEPT Panel Filter

The MEPT panel is constructed of two different layers of tackified polyester media, sealed together so the tackified layers of each media touch in the center. A galvanized nine-gauge wire frame will be inserted into the center of the MEPT panel, so the wire is touching the tackified sides of both media. The MEPT panel has an initial pressure drop of 0.06 water gauge (w.g.) at 150 feet per minute.

The air-entry layer is constructed of multi-layered, multi-density polyester with a heavy, non-migrating tackifier on the air-leaving side. The air-leaving media is a heavily needled polyester, densified to 1/4" thick, tackified on the air-entry side with a weight of 0.42 oz per square foot. The air leaving side is jet-ink printed for identification and proper installation.

GFS Part Numbers:

- 216-501, 20" X 20" X 1"
- 216-517, 24" X 24" X 1"

3RD STAGE - Bag Filters

The 6-pocket bag filter is constructed of a composite of pre-filter, melt blown and spun bound polyester fibers. The pockets are sewn together on the perimeter with two heat seals, forming three air channels in each bag pocket.

The bag pockets on the metal support is inserted into a galvanized metal header. The galvanized header contains an acceptable sealing agent inside of each header to eliminate the possibility of paint bypass within the filter.

GFS Part Numbers:

- 216-505, 20" X 20" X 12"
- 216-516, 24" X 24" X 12"

GLOBAL FINISHING SOLUTIONS

12731 Norway Road | Osseo, Wisconsin 54758
800-848-8738 | parts@globalfinishing.com
GLOBALFINISHING.COM

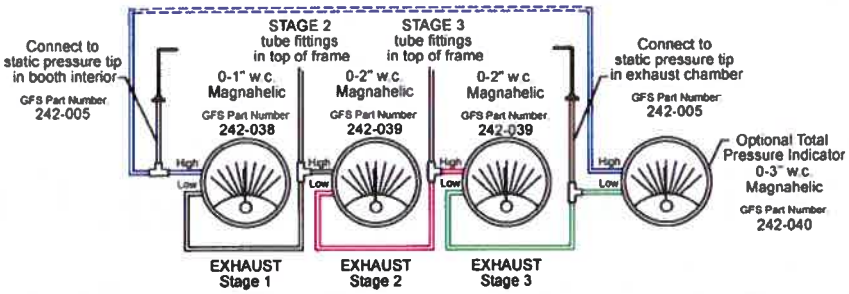
FILTER MONITORING SYSTEM

A self-contained unit that monitors air filter pressure drop on a stage-by-stage basis. GFS' filter monitoring frame is designed to fit within an existing exhaust filter bank framework. Housing each filter within this unit allows multiple access tubes to be permanently mounted between each of these stages to monitor individual pressure drops.

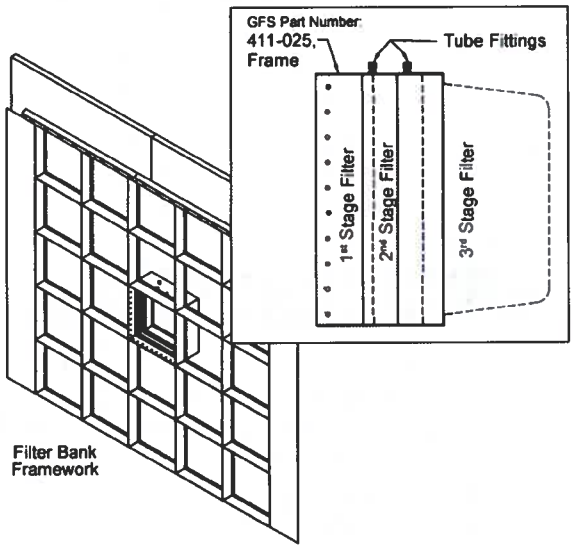
Manual or electronic magnahelic gauges are connected for data collection. Pressure is taken at each of the three stages. Magnahelic gages located near the booth display the filter pressure. This allows filters to be changed consistently at appropriate pressure drops, ensuring emission standards compliance, quality paint finishes and filter longevity. Optional transmitter is available for data logging applications.

GFS Part Numbers:

- 600-200, 20" x 20" filter rack
- 600-201, 24" x 24" filter rack



3-Stage Monitor Connection



TEST DATA RESULTS

Method 319 Challenge Agents

Independent testing clearly demonstrates Aerospace Paint Overspray Collection System meets and far exceeds Method 319 Emission Standards for Aerospace Manufacturing and Rework Facilities in both liquid and solid phase.

	Efficiency Requirements Micron Size	Efficiency of 3rd Stage Filter
Liquid Challenge	> 0.42 (>65%)	92.3%
	> 1.00 (>80%)	98.9%
	> 2.00 (>95%)	99.7%
Solid Challenge	> 0.70 (>75%)	96.6%
	> 1.70 (>85%)	98.4%
	> 2.50 (>95%)	99.6%

Conditions Pertinent to Filter Changing		
1st Stage	2nd Stage	3rd Stage
+0.5" w.c.	+1.0" w.c.	+1.0" w.c.

Above Clean Operating Point

3-Stage Filter Build-Up Data	
Initial Pressure Drop	0.25" w.c.
Final Pressure Drop	3.0" w.c.

LMS TECHNOLOGIES, INC.

6423 Cecilia Circle
Bloomington, MN 55439
(952) 918-9060, Fax: (952) 918-9061

Test Report-ASHRAE Test Standard 52.2

Report #: **1525**
Test Date: **03/31/2008**

Test Requested By:	**A. J. Dralle**
Manufacturer:	**A. J. Dralle**
Product Name:	**XFP-6000**
Model Number:	
Dimensions:	**24" x 24" x 12"**
Number of Pockets:	**6-Pockets**
Filter Description:	**White, Synthetic Bag Filter**
How Filter Obtained:	**Provided by A. J. Dralle**

Test Results

Test Air Flow Rate(CFM)/Velocity (FPM)	**472 cfm / 118 fpm**
Initial Resistance (in. WG)	**0.240"**
Final Resistance (in. WG)	**1.400"**
Minimum Efficiency Rating Value **(MERV)**	**MERV 16 @ 472 cfm**
Minimum Average Efficiency 0.3 to 1.0 Microns **(E1)**	**95.2**
Minimum Average Efficiency 1.0 to 3.0 Microns **(E2)**	**99.3**
Minimum Average Efficiency 3.0 to 10 Microns **(E3)**	**99.9**
Dust Fed to Final Resistance(grams)	**93.1 grams**

Test Description

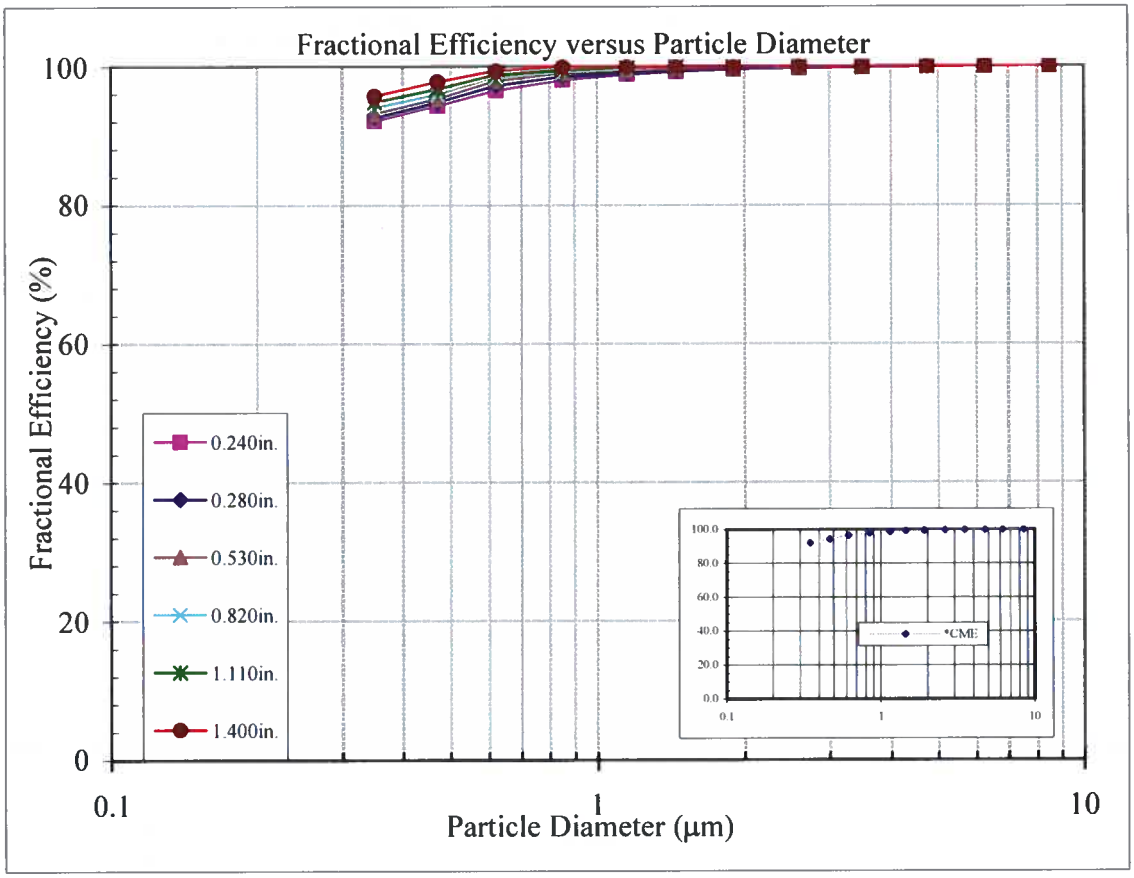
Temp & Humidity:	**71 @ 30%**
Particle Analysis:	**Hiac/Royco FE-80**
Test Dust:	**ASHRAE 52.1 Dust**
Test Aerosol:	**KCl, Neutralized**

Test Engineer :	**Mick Flom/Emile Tadros/Kian Imani/Todd Krueger/Pat Best**
Approved By:	**K. C. Kwok, Ph.D.**

LMS Technologies, Inc.
6423 Cecilia Circle
Bloomington, MN 55439
(612) 918-9060, Fax: (612) 918-9061

Date :	April 1, 2008	Requested by :
Filter ID :	XFP-6000	A. J. Dralle
Test Type :	52.2 **REP#: 1525**	Manufacturer :
Test Aerosol :	KCl, Neutralized	A. J. Dralle

ΔP (" H_2O)	0.240in.	0.280in.	0.530in.	0.820in.	1.110in.	1.400in.	*CME
Size Range (μm)	Fractional Efficiency (%)						
0.3-0.4	92.1	92.6	93.1	94.0	94.8	95.7	92.1
0.4-0.55	94.3	94.8	95.3	95.9	96.7	97.8	94.3
0.55-0.7	96.5	97.2	97.9	98.4	98.8	99.4	96.5
0.7-1.0	98.0	98.5	99.0	99.2	99.4	99.9	98.0
1.0-1.3	98.8	99.1	99.4	99.6	99.8	99.9	98.8
1.3-1.6	99.2	99.5	99.8	99.9	99.9	99.9	99.2
1.6-2.2	99.5	99.7	99.9	99.9	99.9	99.9	99.5
2.2-3.0	99.7	99.8	99.9	99.9	100.0	100.0	99.7
3.0-4.0	99.8	99.9	100.0	100.0	100.0	100.0	99.8
4.0-5.5	99.9	99.9	100.0	100.0	100.0	100.0	99.9
5.5-7.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
7.0-10.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0



TEST SUPERVISOR
MICK FLOM_____

ENGINEERING APPROVAL
K.C. KWOK, PH.D._____

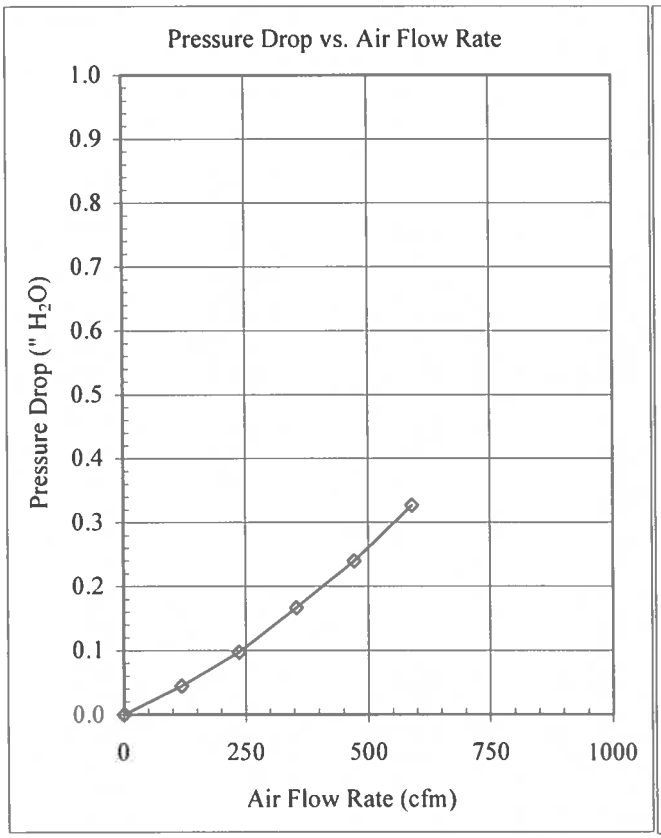
LMS Technologies, Inc.

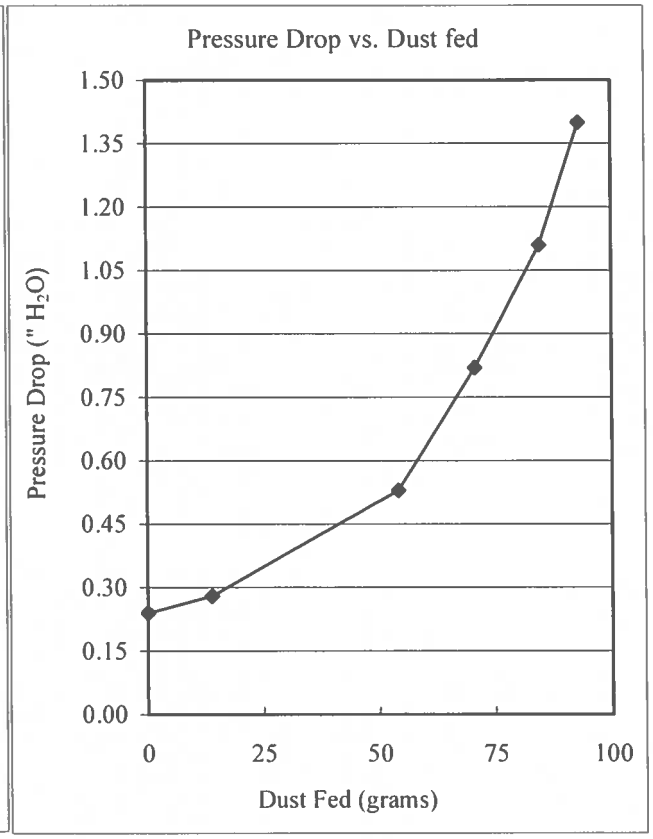
6423 Cecilia Circle, Bloomington, MN 55439

(952) 918-9060, Fax: (952) 918-9061

Date:	April 1, 2008	Test Requested by :
Filter ID :	XFP-6000	A. J. Dralle
Test Type :	Pressure Drop of Clean Filter	Filter Manufacturer :
	for ASHRAE **52.2** **REP#: 1525**	A. J. Dralle

Flow Rate (CFM)	Velocity FPM	dP (mm H2O)	Pressure drop ("H2O)	% of Rated Airflow	Dust fed	Pressure drop
0	0	0.00	0.000	0%	0.00	0.240
118	30	1.13	0.044	25%	13.70	0.280
236	59	2.47	0.097	50%	54.10	0.530
354	89	4.23	0.167	75%	70.70	0.820
472	118	6.09	0.240	100%	84.80	1.110
590	148	8.30	0.327	125%	93.10	1.400





TEST SUPERVISOR
*MICK FLOM*_____

ENGINEERING APPROVAL
*K.C.KWOK PH.D.*_____

DP1

APPENDIX B

RECORD KEEPING FORMS

BUILDING 432 - AARGM ER
PERMIT R13-????
IPA WIPE CLEAN - STEP 1

	IPA		IPA		Application Time (hours)	Application Time YTD	** Pounds Daily	** Pounds YTD (313)	** Pounds/Hr
	# of units wipe cleaned		volume of IPA (ounces)						
DATE	Daily	YTD (360)	Daily	YTD (6,084)					
1/1/2022	12	12	202.8	202.8	2	2	10.43	10.43	5.21
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!

IPA used per unit	16.9 ounces

Density - 6.58 lb/gal
VOC - 100%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM-ER
PERMIT R13-????
SEALANT APPLICATION (PR-1826 Class B OR PR-2001 B-2) - STEP 3

DATE	1826 or 2001	SEALANT # of units sealed		SEALANT Volume (ounces)		Processing Time (hours)	Processing Time YTD	** VOC Pounds Daily	** VOC Pounds YTD (0.1)	** VOC Pounds/Hr
		Daily	YTD (360)	Daily	YTD (148)					
1/1/2022	2001	12	12	4.92	4.92	2	2	0.00	0.0005	0.00
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!
			12		4.92		2	0.00	0.00	#DIV/0!

0.41 oz of sealant used per unit
Density - 11.99 lb/gal
VOC - 0.1%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM-ER
PERMIT R13-????
SURFACE PREP MIL-C-8514 - STEP 4

DATE	Randolph or SW	MIL-C-8514 # of units sprayed Daily	MIL-C-8514 # of units sprayed YTD (360)	MIL-C-8514 Volume (ounces) Daily	MIL-C-8514 Volume (ounces) YTD (518)	Processing Time (hours)	Processing Time YTD	SPRAY TOTALS TOTAL (lb/spray)	SPRAY TOTALS AVE HOURLY (lb/hr)	SPRAY TOTALS YTD (30 lbs)	VOC TOTAL TOTAL (lb/spray)	VOC TOTAL AVE HOURLY (lb/hr)
1/1/2022	Randolph	12	12	17.28	17.28	2	2	0.97	0.49	0.97	0.82	0.41
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!
			12		17.28		2	0.00	#DIV/0!	0.97	0.00	#DIV/0!

1.44 oz used per unit
Density - 7.2 lb/gal
VOC - 84.3%; PM - 6.9%; HAP-VOC - 2.3%; HAP-PM - 4.6%

**Environmental group use only - this column will not be on the production floor record sheet

Butanol	9.50%
Ethanol	35.25%
IPA	37.13%
Methanol	1.50%
MIBK	0.75%
Zinc chroma	4.55%

BUILDING 432 - AARGM-ER
PERMIT R13-????
SURFACE PREP MIL-C-8514 - STEP 4

S	HAP-VOC TOTALS			PM TOTALS			HAP-PM TOTALS		
YTD (25 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (1 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (0.1 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (0.1 lbs)
0.82	0.02	0.01	0.02	0.003	0.002	0.003	0.002	0.001	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002
0.82	0.00	#DIV/0!	0.02	0.000	#DIV/0!	0.003	0.000	#DIV/0!	0.002

BUILDING 432 - AARGM-ER
PERMIT R13-????
TS12983 PRIMER - 1ST COAT - STEP 5

BUI

TS12983

DATE	TS12983 # of units sprayed		TS12983 Volume (ounces)		Processing Time (hours)	Processing Time YTD	SPRAY TOTALS			VOC TOTALS			HA
	Daily	YTD (360)	Daily	YTD (1,549)			TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (104 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (70 lbs)	TOTAL (lb/spray)
1/1/2022	12	12	51.6	51.6	2	2	3.46	1.73	3.46	2.32	1.16	2.32	1.94
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00
		12		51.6		2	0.00	#DIV/0!	3.46	0.00	#DIV/0!	2.32	0.00

4.3 oz used per unit
Density - 8.59 lb/gal
VOC - 67.138%; PM - 14.795%; HAP-VOC -56.07%; HAP-PM - 4.895%

**Environmental group use only - this column will not be on the production floor record sheet

Cyclohexanone	6.68%
MEK	6.65%
Ethyl benzene	0.40%
MIBK	53.40%
Xylene	2.23%
BaChromate	0.45%
StChromate	4.45%

DING 432 - AARGM-ER
PERMIT R13-????
RIMER - 1ST COAT - STEP 5

-VOC TOTALS		PM TOTALS			HAP-PM TOTALS		
AVE		TOTAL	AVE		TOTAL	AVE	
HOURLY	YTD		HOURLY	YTD		HOURLY	YTD
(lb/hr)	(59 lbs)	(lb/spray)	(lb/hr)	(1 lbs)	(lb/spray)	(lb/hr)	(0.3 lbs)
0.97	1.94	0.026	0.013	0.026	0.008	0.004	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008
#DIV/0!	1.94	0.000	#DIV/0!	0.026	0.000	#DIV/0!	0.008

BUILDING 432 - AARGM-ER
PERMIT R13-????
DOWSIL Q1-2650 - STEP 14

BUILDING 432 - AARGM-ER
PERMIT R13-????
DOWSIL Q1-2650 - STEP 14

	DOWSIL Q1-2650 # of units sprayed		DOWSIL Q1-2650 Volume (ounces)		Processing Time (hours)	Processing Time YTD	SPRAY TOTALS			VOC TOTALS			HAP-VOC TOTALS		
DATE	Daily	YTD (360)	Daily	YTD (260)			TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (14 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (13 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (0.1 lbs)
1/1/2022	12	12	8.64	8.64	2	2	0.45	0.23	0.45	0.42	0.21	0.42	0.00	0.001	0.002
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00
		12		8.64		2	0.00	#DIV/0!	0.45	0.00	#DIV/0!	0.42	0.00	#DIV/0!	0.00

0.72 oz used per unit
Density - 6.72 lb/gal
VOC - 93.5%; HAP-VOC -0.5%

IPA	92.50%
Methanol	0.50%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM-ER
PERMIT R13-????
TS12983 PRIMER - 2ND COAT - STEP 15

BUIL

TS12983 P

DATE	TS12983 # of units sprayed Daily	 YTD (360)	TS12983 Volume (ounces) Daily	 YTD (465)	Processing Time (hours)	Processing Time YTD	SPRAY TOTALS TOTAL (lb/spray)	 AVE HOURLY (lb/hr)	 YTD (32 lbs)	VOC TOTALS TOTAL (lb/spray)	 AVE HOURLY (lb/hr)	 YTD (21 lbs)	HAI TOTAL (lb/spray)
1/1/2022	12	12	15.6	15.6	2	2	1.05	0.52	1.05	0.70	0.35	0.70	0.59
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00
		12		15.6		2	0.00	#DIV/0!	1.05	0.00	#DIV/0!	0.70	0.00

1.3 oz used per unit
Density - 8.59 lb/gal
VOC - 67.138%; PM - 14.795%; HAP-VOC -56.07%; HAP-PM - 4.895%

**Environmental group use only - this column will not be on the production floor record sheet

Cyclohexanone	6.68%
MEK	6.65%
Ethyl benzene	0.40%
MIBK	53.40%
Xylene	2.23%
BaChromate	0.45%
StChromate	4.45%

DING 432 - AARGM-ER

PERMIT R13-????

RIMER - 2ND COAT - STEP 15

-VOC TOTALS		PM TOTALS			HAP-PM TOTALS		
AVE		TOTAL	AVE		TOTAL	AVE	
HOURLY	YTD		HOURLY	YTD		HOURLY	YTD
(lb/hr)	(17.5 lbs)	(lb/spray)	(lb/hr)	(0.25 lbs)	(lb/spray)	(lb/hr)	(0.1 lbs)
0.29	0.59	0.008	0.004	0.008	0.003	0.001	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003
#DIV/0!	0.59	0.000	#DIV/0!	0.008	0.000	#DIV/0!	0.003

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 GRAY - STEP 16

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 GRAY - STEP 16

DATE	MIL-85285-Gray # of units sprayed		MIL-85285-Gray Volume (ounces)		Processing Time (hours)	Processing Time YTD	SPRAY TOTALS			VOC TOTALS			PM TOTALS		
	Daily	YTD (360)	Daily	YTD (20,650)			TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (1495 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (60 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (12lbs)
1/1/2022	12	12	688.8	688.8	2	2	49.83	24.92	49.83	1.87	0.93	1.87	0.392	0.196	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392
		12		688.8		2	0.00	#DIV/0!	49.83	0.00	#DIV/0!	1.87	0.000	#DIV/0!	0.392

57.4 oz used per unit
Density - 9.26 lb/gal
VOC - 3.75%; PM - 15.75%

Butyl acetate	3.80%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 YELLOW - STEP 16A

DATE	MIL-85285-Yellow # of units sprayed		MIL-85285-Yellow Volume (ounces)		Processing Time (hours)	Processing Time YTD	SPRAY TOTALS			VOC TOTALS		
	Daily	YTD (360)	Daily	YTD (5,760)			TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (430 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (208 lbs)
1/1/2022	12	12	192	192	1	1	14.34	14.34	14.34	6.92	6.92	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92
		12		192		1	0.00	#DIV/0!	14.34	0.00	#DIV/0!	6.92

16 oz used per unit
Density - 9.56 lb/gal
VOC - 48.25%; PM - 19.5%; HAP-VOC -0.825%; HAP-PM - 0.75%

Butyl acetate	2.50%
MAK	22.50%
Methyl acetate	15.00%
Ethyl benzene	0.08%
Xylene	0.75%
Cr comp.	0.75%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 YELLOW - STEP 16A

HAP-VOC TOTALS			PM TOTALS			HAP-PM TOTALS		
TOTAL	AVE		TOTAL	AVE		TOTAL	AVE	
	HOURLY	YTD		HOURLY	YTD		HOURLY	YTD
(lb/spray)	(lb/hr)	(4 lbs)	(lb/spray)	(lb/hr)	(4.5 lbs)	(lb/spray)	(lb/hr)	(0.2 lbs)
0.12	0.12	0.12	0.140	0.140	0.140	0.005	0.005	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005
0.00	#DIV/0!	0.12	0.000	#DIV/0!	0.140	0.000	#DIV/0!	0.005

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 BROWN - STEP 16B

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 BROWN - STEP 16B

DATE	MIL-85285-Brown # of units sprayed		MIL-85285-Brown Volume (ounces)		Processing Time (hours)	Processing Time YTD	SPRAY TOTALS			VOC TOTALS			PM TOTALS		
	Daily	YTD (360)	Daily	YTD (5,760)			TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (435 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (195 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (1.5 lbs)
1/1/2022	12	12	192	192	2	2	14.49	7.25	14.49	6.48	3.24	6.48	0.043	0.022	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043
		12		192		2	0.00	#DIV/0!	14.49	0.00	#DIV/0!	6.48	0.000	#DIV/0!	0.043

16 oz used per unit
Density - 9.66 lb/gal
VOC - 44.7%; PM - 6.0%

**Environmental group use only - this column will not be on the production floor record sheet

1,2,4-TMB	0.68%
1,3,5-TMB	0.25%
Butyl acetate	1.25%
Ethyl acetate	1.25%
Lt. Arom. HC	0.70%
MAK	37.50%

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 BLACK - STEP 16C

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 BLACK - STEP 16C

	MIL-85285-Black # of units sprayed		MIL-85285-Black Volume (ounces)		Processing Time	Processing Time	SPRAY TOTALS			VOC TOTALS			HAP-VOC TOTALS			PM TOTALS		
DATE	Daily	YTD (360)	Daily	YTD (5,760)	(hours)	YTD	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (406 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (181 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (3.1 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (3 lbs)
1/1/2022	12	12	192	192	1	1	13.52	13.52	13.52	6.01	6.01	6.01	0.10	0.10	0.10	0.096	0.096	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096
		12		192		1	0.00	#DIV/0!	13.52	0.00	#DIV/0!	6.01	0.00	#DIV/0!	0.10	0.000	#DIV/0!	0.096

16 oz used per unit
Density - 9.01 lb/gal
VOC - 44.5%, PM - 14.25%, HAP-VOC -0.75%

2-EHA	22.50%
Butyl acetate	2.50%
MAK	7.50%
Xylene	0.75%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 RED - STEP 16D

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 RED - STEP 16D

DATE	MIL-85285-Red # of units sprayed		MIL-85285-Red Volume (ounces)		Processing Time (hours)	Processing Time YTD	SPRAY TOTALS			VOC TOTALS			HAP-VOC TOTALS			PM TOTALS		
	Daily	YTD (36)	Daily	YTD (576)			TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (41 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (14 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (1.2 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (0.5 lbs)
1/1/2022	12	12	192	192	1	1	13.68	13.68	13.68	4.54	4.54	4.54	0.04	0.04	0.04	0.128	0.128	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128
		12		192		1	0.00	#DIV/0!	13.68	0.00	#DIV/0!	4.54	0.00	#DIV/0!	0.04	0.000	#DIV/0!	0.128

16 oz used per unit
Density - 9.12 lb/gal
VOC - 33.175%, PM - 18.75%, HAP-VOC -2.85%

Butyl acetate	13.13%
MAK	13.50%
MEK	3.75%
Xylene	2.50%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM-ER
PERMIT R13-????
<u>MIL-PRF-85285 GREEN - STEP 16E</u>

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 GREEN - STEP 16E

DATE	MIL-85285-Green # of units sprayed Daily	MIL-85285-Green # of units sprayed YTD (36)	MIL-85285-Green Volume (ounces) Daily	MIL-85285-Green Volume (ounces) YTD (576)	Processing Time (hours)	Processing Time YTD	SPRAY TOTALS TOTAL (lb/spray)	SPRAY TOTALS AVE HOURLY (lb/hr)	SPRAY TOTALS YTD (44 lbs)	VOC TOTALS TOTAL (lb/spray)	VOC TOTALS AVE HOURLY (lb/hr)	VOC TOTALS YTD (16 lbs)	HAP-VOC TOTALS TOTAL (lb/spray)	HAP-VOC TOTALS AVE HOURLY (lb/hr)	HAP-VOC TOTALS YTD (0.5 lbs)	PM TOTALS TOTAL (lb/spray)	PM TOTALS AVE HOURLY (lb/hr)	PM TOTALS YTD (0.7 lbs)
1/1/2022	12	12	192	192	1	1	14.58	14.58	14.58	5.21	5.21	5.21	0.11	0.11	0.11	0.225	0.225	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225
		12		192		1	0.00	#DIV/0!	14.58	0.00	#DIV/0!	5.21	0.00	#DIV/0!	0.11	0.000	#DIV/0!	0.225

16 oz used per unit
Density - 9.72 lb/gal
VOC - 35.725%, PM - 30.9%, HAP-VOC -0.75%

**Environmental group use only - this column will not be on the production floor record sheet

1,2,4-TMB	0.40%
Butyl acetate	0.75%
Lt. Arom. HC	0.38%
MAK	9.38%
MEK	15%
PGMEA	3.75%
Toluene	0.75%

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 BLUE - STEP 16F

BUILDING 432 - AARGM-ER
PERMIT R13-????
MIL-PRF-85285 BLUE - STEP 16F

	MIL-85285-Blue		MIL-85285-Blue		Processing Time	Processing Time	SPRAY TOTALS			VOC TOTALS			HAP-VOC TOTALS			PM TOTALS		
	# of units sprayed		Volume (ounces)				TOTAL	AVE		TOTAL	AVE		TOTAL	AVE		TOTAL	AVE	
	Daily	YTD (36)	Daily	YTD (576)	(hours)	YTD		HOURLY	YTD		HOURLY	YTD		HOURLY	YTD		HOURLY	YTD
DATE							(lb/spray)	(lb/hr)	(38 lbs)	(lb/spray)	(lb/hr)	(12.5 lbs)	(lb/spray)	(lb/hr)	(1.1 lbs)	(lb/spray)	(lb/hr)	(0.5 lbs)
1/1/2022	12	12	192	192	1	1	12.57	12.57	12.57	4.06	4.06	4.06	0.36	0.36	0.36	0.146	0.146	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146
		12		192		1	0.00	#DIV/0!	12.57	0.00	#DIV/0!	4.06	0.00	#DIV/0!	0.36	0.000	#DIV/0!	0.146

16 oz used per unit
Density - 8.38 lb/gal
VOC - 32.275%; PM - 23.25%; HAP-VOC -2.85%

Butyl acetate	11.63%
MAK	18.00%
Xylene	2.50%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM-ER
PERMIT R13-????
SS4155 PRIMER - STEP 7

BUILDING 432 - AARGM-ER
PERMIT R13-????
SS4155 PRIMER - STEP 7

DATE	SS4155 Primer # of units wiped		SS4155 Primer Volume (ounces)		Processing Time (hours)	Processing Time YTD	WIPE TOTALS			VOC TOTALS			PM TOTALS		
	Daily	YTD (360)	Daily	YTD (260)			TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (14 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (13 lbs)	TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (0.5 lbs)
1/1/2022	12	12	864	864	2	2	45.63	22.82	45.63	43.07	21.54	43.07	0.000	0.000	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000
		12		864		2	0.00	#DIV/0!	45.63	0.00	#DIV/0!	43.07	0.000	#DIV/0!	0.000

0.72 oz used per unit
Density - 6.76 lb/gal
VOC - 94.4%; PM - 5.6%

Varsol	94.40%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM-ER
PERMIT R13-????
PR-9921 SEALANT 1st COAT - STEP 8

BUILDING 432 - AARGM-ER
PERMIT R13-????
PR-9921 SEALANT 1st COAT - STEP 8

DATE	PR-9921		PR-9921		Processing Time (hours)	Processing Time YTD	BRUSH TOTALS			VOC TOTALS			HAP-VOC TOTALS		
	# of units brushed		Volume (ounces)				TOTAL	AVE		TOTAL	AVE		TOTAL	AVE	
	Daily	YTD (360)	Daily	YTD (360)			(lb/spray)	HOURLY (lb/hr)	YTD (14 lbs)	(lb/spray)	HOURLY (lb/hr)	YTD (13 lbs)	(lb/spray)	HOURLY (lb/hr)	YTD (0.5 lbs)
1/1/2022	12	12	229.44	229.44	1	1	13.48	13.48	13.48	9.44	9.44	9.44	9.436	9.436	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436
		12		229.44		1	0.00	#DIV/0!	13.48	0.00	#DIV/0!	9.44	0.000	#DIV/0!	9.436

19.13 oz used per unit
Density - 7.52 lb/gal
VOC - 70%; HAP-VOC -0.75%

Xylene	70.00%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM ER
PERMIT R13-????
IPA WIPE CLEAN AFTER PR-9921 1ST COAT - STEP 10

DATE	Sanding		Sanding		Sanding Time	Sanding Time	**	**	**	PM TOTALS		
	# of units sanded		volume of PM		(hours)	YTD	Pounds Daily	Pounds YTD (125)	Pounds/Hr	TOTAL (lb/sand)	AVE HOURLY (lb/hr)	YTD (6.25 lbs)
	Daily	YTD (360)	Daily	YTD (1,995)								
1/1/2022	12	12	66.48	66.48	1	1	4.16	4.16	4.16	0.021	0.021	0.005
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00
		12		66.48		1		4.16	#DIV/0!		0.02	0.00

5.55 ounces of PM generated per unit
Density - 8.0 lb/gal
PM - 100%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM ER
PERMIT R13-????
IPA WIPE CLEAN AFTER PR-9921 1ST COAT - STEP 10

DATE	IPA # of units wipe cleaned		IPA volume of IPA (ounces)		Application Time (hours)	Application Time YTD	VOC TOTALS		
	Daily	YTD (360)	Daily	YTD (6,084)			TOTAL (lb/spray)	AVE HOURLY (lb/hr)	YTD (313 lbs)
1/1/2022	12	12	202.8	202.8	2	2	10.43	10.43	5.21
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!

IPA used per unit 16.9 ounces
Density - 6.58 lb/gal
VOC - 100%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM-ER
PERMIT R13-????
PR-9921 SEALANT 2nd COAT - STEP 11

BUILDING 432 - AARGM-ER
PERMIT R13-????
PR-9921 SEALANT 2nd COAT - STEP 11

DATE	PR-9921 # of units brushed Daily	PR-9921 # of units brushed YTD (360)	PR-9921 Volume (ounces) Daily	PR-9921 Volume (ounces) YTD (860)	Processing Time (hours)	Processing Time YTD	BRUSH TOTALS TOTAL (lb/spray)	BRUSH TOTALS AVE HOURLY (lb/hr)	BRUSH TOTALS YTD (14 lbs)	VOC TOTALS TOTAL (lb/spray)	VOC TOTALS AVE HOURLY (lb/hr)	VOC TOTALS YTD (13 lbs)	HAP-VOC TOTALS TOTAL (lb/spray)	HAP-VOC TOTALS AVE HOURLY (lb/hr)	HAP-VOC TOTALS YTD (0.5 lbs)
1/1/2022	12	12	28.8	28.8	1	1	1.69	1.69	1.69	1.18	1.18	1.18	1.184	1.184	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184
		12		28.8		1	0.00	#DIV/0!	1.69	0.00	#DIV/0!	1.18	0.000	#DIV/0!	1.184

2.4 oz used per unit
Density - 7.52 lb/gal
VOC - 70%; HAP-VOC -0.75%

Xylene 70.00%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM ER
PERMIT R13-????
IPA WIPE CLEAN AFTER PR-9921 1ST COAT - STEP 10

DATE	Sanding # of units sanded Daily	Sanding # of units sanded YTD (360)	Sanding volume of PM Daily	Sanding volume of PM YTD (100)	Sanding Time (hours)	Sanding Time YTD	** Pounds Daily	** Pounds YTD (125)	** Pounds/Hr	PM TOTALS TOTAL (lb/sand)	PM TOTALS AVE HOURLY (lb/hr)	PM TOTALS YTD (0.5 lbs)
1/1/2022	12	12	3.312	3.312	1	1	0.21	0.21	0.21	0.010	0.010	0.050
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00
		12		3.312		1		0.21	#DIV/0!		0.01	0.00

0.3 ounces of PM generated per unit
Density - 8.0 lb/gal
PM - 100%

**Environmental group use only - this column will not be on the production floor record sheet

BUILDING 432 - AARGM ER
PERMIT R13-????
IPA WIPE CLEAN AFTER PR-9921 2nd COAT - STEP 13

	IPA		IPA		Application Time	Application Time	VOC TOTALS		
	# of units wipe cleaned		volume of IPA (ounces)		(hours)	YTD	TOTAL	AVE	
DATE	Daily	YTD (360)	Daily	YTD (6,084)			(lb/spray)	HOURLY (lb/hr)	YTD (313 lbs)
1/1/2022	12	12	202.8	202.8	2	2	10.43	10.43	5.21
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!
		12		202.8		2		10.43	#DIV/0!

IPA used per unit	16.9 ounces

Density - 6.58 lb/gal
VOC - 100%

**Environmental group use only - this column will not be on the production floor record sheet

FILTER CHECK RECORD

Building #: 432 - AARGM ER

Bay or Booth #: 2-16E / 2-17E Exhaust Booths

Supervisor:

Spray Booth Filter Checks		
Date		
	Yes	No
Manometer Reading Okay?		
Filters Overloaded?		
Filters Properly Seated?		
Holes in filters?		
Comments		
Badge No.		
Filters Changed?		
Date		
Comments		

Spray Booth Filter Checks		
Date		
	Yes	No
Manometer Reading Okay?		
Filters Overloaded?		
Filters Properly Seated?		
Holes in filters?		
Comments		
Badge No.		
Filters Changed?		
Date		
Comments		

Date		
	Yes	No
Manometer Reading Okay?		
Filters Overloaded?		
Filters Properly Seated?		
Holes in filters?		
Comments		
Badge No.		
Filters Changed?		
Date		
Comments		

Date		
	Yes	No
Manometer Reading Okay?		
Filters Overloaded?		
Filters Properly Seated?		
Holes in filters?		
Comments		
Badge No.		
Filters Changed?		
Date		
Comments		

Date		
	Yes	No
Manometer Reading Okay?		
Filters Overloaded?		
Filters Properly Seated?		
Holes in filters?		
Comments		
Badge No.		
Filters Changed?		
Date		
Comments		

Date		
	Yes	No
Manometer Reading Okay?		
Filters Overloaded?		
Filters Properly Seated?		
Holes in filters?		
Comments		
Badge No.		
Filters Changed?		
Date		
Comments		

Date		
	Yes	No
Manometer Reading Okay?		
Filters Overloaded?		
Filters Properly Seated?		
Holes in filters?		
Comments		
Badge No.		
Filters Changed?		
Date		
Comments		

Date		
	Yes	No
Manometer Reading Okay?		
Filters Overloaded?		
Filters Properly Seated?		
Holes in filters?		
Comments		
Badge No.		
Filters Changed?		
Date		
Comments		

The only blocks that are not required to be completed for each daily check are those for comments.

ATTACHMENT H

SDSs FOR ALL MATERIALS

Univar
3075 Highland Pkwy STE 200
Downers Grove, IL 60515
425-889-3400

SAFETY DATA SHEET

1. Identification

Product identifier: ISOPROPYL ALCOHOL SOLUTION

Other means of identification

Synonyms:	IPA, 2-Propanol, Propanol, Isopropanol
CAS NUMBERS:	67-63-0
SDS number:	000100000034

Recommended use and restriction on use

Recommended use: Reserved for industrial and professional use.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Univar

3075 Highland Pkwy STE 200

Downers Grove, IL 60515

425-889-3400

Emergency telephone number:For emergency assistance Involving chemicals

call CHEMTREC day or night at: 1-800-424-9300. CHEMTREC INTERNATIONAL Tel# 703-527-3887

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids	Category 2

Health Hazards

Serious Eye Damage/Eye Irritation	Category 2A
Specific Target Organ Toxicity - Single Exposure	Category 3

Label Elements

Hazard Symbol

Signal Word	Danger
Hazard Statement	Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness.
Precautionary Statements	
Prevention	Use personal protective equipment as required. Keep container tightly closed. Ground and bond container and receiving equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof [electrical/ventilating/lighting/...] equipment. Use non-sparking tools. Take action to prevent static discharges. Wash thoroughly after handling.
Response	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF exposed or concerned: Get medical advice/attention.
Storage	Store in a closed container. Keep container tightly closed. Store in a well-ventilated place. Store in a dry place. Store locked up.

Disposal	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Isopropyl Alcohol		67-63-0	>=10 - <=99%
Water		7732-18-5	>=1 - <=90%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion:	Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person. Rinse mouth thoroughly.
Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. Perform artificial respiration if breathing has stopped. Get medical attention immediately.
Skin Contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Take off immediately all contaminated clothing. Rinse skin with water [or shower].
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: Get medical attention if symptoms occur.

5. Fire-fighting measures

General Fire Hazards: Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use: Carbon dioxide or dry powder. Water in large amounts. Alcohol resistant foam. Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: Heat may cause the containers to explode. Vapors may travel considerable distance to a source of ignition and flash back. Vapors may cause a flash fire or ignite explosively. Prevent buildup of vapors or gases to explosive concentrations.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Use water spray to keep fire-exposed containers cool. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Keep unauthorized personnel away. Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep upwind.

Methods and material for containment and cleaning up: All equipment used when handling the product must be grounded. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Dike far ahead of larger spill for later recovery and disposal. In case of leakage, eliminate all ignition sources.

Notification Procedures: Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk.

Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling: Flammable/combustible - Keep away from oxidizers, heat and flames. Avoid contact with skin and eyes. Avoid breathing mists or vapors. Use only with adequate ventilation. Wash hands thoroughly after handling. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities: Store in a well-ventilated place. Store in a cool place.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values		Source
Isopropyl Alcohol	STEL	500 ppm	1,225 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	TWA	400 ppm	980 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL		4,920 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL		492 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL		2,000 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL		200 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	TWA PEL	400 ppm	980 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	STEL	500 ppm	1,225 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)

	STEL	400 ppm		US. ACGIH Threshold Limit Values (2008)
	STEL	500 ppm	1,225 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	PEL	400 ppm	980 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	400 ppm	980 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	500 ppm	1,225 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA	200 ppm		US. ACGIH Threshold Limit Values (2008)
	REL	400 ppm	980 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
Isopropyl Alcohol (acetone: Sampling time: End of shift at end of work week.)	40 mg/l (Urine)	ACGIH BEL (03 2013)

Appropriate Engineering Controls No data available.

Individual protection measures, such as personal protective equipment

General information: Use personal protective equipment as required. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Practice good housekeeping. Provide easy access to water supply and eye wash facilities. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If exposure limits have not been established, maintain airborne levels to an acceptable level. Use explosion-proof ventilation equipment.

Eye/face protection: Wear safety glasses with side shields (or goggles).

Skin Protection

Hand Protection: No data available.

Other: No data available.

Respiratory Protection: In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.

Hygiene measures: Avoid contact with eyes. Observe good industrial hygiene practices. When using do not smoke.

9. Physical and chemical properties

Physical state:	liquid
Form:	No data available.
Color:	Colorless
Odor:	Odor of alcohol
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	-89 °C
Initial boiling point and boiling range:	80 - 100 °C
Flash Point:	12 °C
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	4.399638 kPa
Vapor density:	2.07
Relative density:	0.7855
Solubility(ies)	
Solubility in water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	0.05
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	2.6 mm2/s

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	Flammable/combustible - Keep away from oxidizers, heat and flames.
Incompatible Materials:	Strong oxidizing agents. Aldehydes. Amines. Caustics. Alkanolamines.
Hazardous Decomposition Products:	No data available.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion:	No data available.
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product:	LC 50 (Rat): 5,840 mg/kg

Dermal

Product: Not classified for acute toxicity based on available data.

Inhalation

Product: No data available.

Specified substance(s):

Isopropyl Alcohol LC 50 (Rat, 6 h): (, Yes) 1 = reliable without restrictions

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: No data available.

Serious Eye Damage/Eye Irritation

Product: No data available.

Respiratory or Skin Sensitization

Product: No data available.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified**US. National Toxicology Program (NTP) Report on Carcinogens:**

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product:	No data available.
Specified substance(s):	
Isopropyl Alcohol	LC 50 (Fathead minnow (Pimephales promelas), 72 h): 11,130 mg/l Mortality LC 50 (Fathead minnow (Pimephales promelas), 96 h): 11,130 mg/l Mortality LC 50 (Bluegill (Lepomis macrochirus), 48 h): > 1,400 mg/l Mortality LC 50 (Western mosquitofish (Gambusia affinis), 48 h): > 1,400 mg/l Mortality LC 50 (Fathead minnow (Pimephales promelas), 96 h): 9,230 - 10,000 mg/l Mortality

Aquatic Invertebrates

Product:	No data available.
Specified substance(s):	
Isopropyl Alcohol	LC 50 (Common shrimp, sand shrimp (Crangon crangon), 48 h): 900 - 1,950 mg/l Mortality LC 50 (Common shrimp, sand shrimp (Crangon crangon), 96 h): 750 - 1,650 mg/l Mortality LC 50 (Brine shrimp (Artemia salina), 24 h): > 10,000 mg/l Mortality LC 50 (Water flea (Daphnia magna), 24 h): > 10,000 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.

Aquatic Invertebrates

Product:	No data available.

Toxicity to Aquatic Plants

Product:	No data available.

Persistence and Degradability

Biodegradation

Product:	No data available.

BOD/COD Ratio

Product:	No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	No data available.

Partition Coefficient n-octanol / water (log Kow)

Product:	Log Kow: 0.05

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Isopropyl Alcohol	No data available.
Water	No data available.

Known or predicted distribution to environmental compartments

Isopropyl Alcohol	No data available.

Known or predicted distribution to environmental compartments

Water	No data available.

13. Disposal considerations

Disposal instructions:	Discharge, treatment, or disposal may be subject to national, state, or local laws.
Contaminated Packaging:	No data available.

14. Transport information

DOT

UN Number:	UN 1219
UN Proper Shipping Name:	Isopropanol Solution
Transport Hazard Class(es)	
Class:	3
Label(s):	3
Packing Group:	II
Marine Pollutant:	Not regulated.
Special precautions for user:	–

IMDG

UN Number:	UN 1219
UN Proper Shipping Name:	ISOPROPANOL
Transport Hazard Class(es)	
Class:	3
Label(s):	3
EmS No.:	F-E, S-D
Packing Group:	II
Marine Pollutant:	Not regulated.

Special precautions for user:	–

IATA

UN Number:	UN 1219
Proper Shipping Name:	Isopropanol Solution
Transport Hazard Class(es):	
Class:	3
Label(s):	3
Packing Group:	II
Environmental Hazards	Not regulated.
Special precautions for user:	–
Other information	
Passenger and cargo aircraft:	Allowed.
Cargo aircraft only:	Allowed.

15. Regulatory information

US Federal RegulationsUS. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Isopropyl Alcohol Reportable quantity: 100 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

☐ Acute (Immediate) ☐ Chronic (Delayed) ☐ Fire ☐ Reactive ☐ Pressure Generating

SARA 302 Extremely Hazardous Substance

SARA 304 Emergency Release Notification

Chemical Identity	RQ
Isopropyl Alcohol	100 lbs.

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
Chemical Identity	Threshold Planning Quantity
Isopropyl Alcohol	500 lbs
Water	500 lbs

SARA 313 (TRI Reporting)

Chemical Identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Isopropyl Alcohol	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act
Isopropyl Alcohol Listed

US. Massachusetts RTK - Substance List
No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances
No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK
No ingredient regulated by RI Right-to-Know Law present.

Inventory Status: Canada DSL Inventory List: On or in compliance with the inventory
EU EINECS List: On or in compliance with the inventory
US TSCA Inventory: On or in compliance with the inventory

16.Other information, including date of preparation or last revision

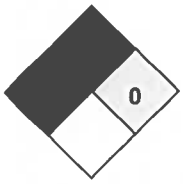
HMIS Hazard ID

Health	*	1
Flammability		3
Physical Hazards		0
PERSONAL PROTECTION		K

K - Hood, Gloves, Protective Suit & Boots

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Flammability
Health
Reactivity
Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date: 01/23/2019
Revision Date: No data available.
Version #: 1.0

Further Information: No data available.

		Emissions Per Lot of 12 Units						Emissions Per Hour						Emissions Per Year				
		lb VOC emitted	lb HAP VOC emitted	Lb PM uncont	lb PM emitted*	lb HAP PM emitted*	Hours Per Lot	lb VOC emitted	lb HAP VOC emitted	lb PM uncont	lb PM cont emitted*	lb HAP PM emitted*	Max Lots Per Year	lb VOC emitted	lb HAP VOC emitted	lbs PM uncont	lb PM emitted*	lb HAP PM emitted*
2-16E	**VOC**	49.77						**31.35**						1120.39				
2-16E	1,2,4-TMB	0.16						**0.08**						3.11				
2-16E	1,3,5-TMB	0.04						**0.02**						1.09				
2-16E	2-EHA	3.04						**3.04**						91.23				
2-16E	Barium chromate					0.0008						**0.0004**						0.0231
2-16E	Butanol	0.09						**0.05**						2.76				
2-16E	Butyl acetate	6.11						**3.40**						92.41				
2-16E	Chromium cmpd					0.0054						**0.0054**						0.1614
2-16E	Cyclohexanone	0.30						**0.15**						9.02				
2-16E	Ethanol	0.34						**0.17**						10.22				
2-16E	Ethyl acetate	0.18						**0.09**						5.43				
2-16E	Ethyl benzene	0.03						**0.11**						6.29				
2-16E	IPA	11.21						**5.60**						336.19				
2-16E	Lt. Arom. HC	0.16						**0.08**						3.21				
2-16E	MAK	15.15						**9.69**						306.58				
2-16E	MEK	3.00						**1.50**						17.09				
2-16E	Methanol	0.02						**0.01**						0.50				
2-16E	Methyl acetate	2.15						**2.15**						64.55				
2-16E	MIBK	2.41						**1.21**						72.37				
2-16E	PGMEA	0.55						**0.27**						1.64				
2-16E	Strontium chromate					0.0100						**0.0050**						0.3006
2-16E	Toluene	0.11						**0.05**						0.33				
2-16E	Xylene	0.97						**0.59**						11.24				
2-16E	Zinc chromate					0.0022						**0.0011**						0.0660
2-16E	**PM**			24.155	1.208	0.019				**14.439**	**0.722**	**0.012**				454.867	22.743	0.551
2-16E	Cr Cmpds			0.357	0.018					**0.232**	**0.012**					10.698	0.535	
2-16E	**HAP-VOC**														90.74			
2-16E	**HAP-PM**																	0.551
2-16E																		
2-17E	**VOC**	31.90						**21.26**						957.15				
2-17E	IPA	20.86						**10.43**						625.85				
2-17E	Varsol	0.43						**0.21**						12.83				
2-17E	Xylene	10.62	10.62					**10.62**	**10.62**					318.47				
2-17E	**PM**				0.2182					**4.3636**	**0.2182**					130.9091	6.5455	
2-17E	**HAP-VOC**														318.47			

Annual Total (lb/hr)	2077.54	409.20	585.7760	29.2888	0.551
Annual Total (lb/hr)	1.039	0.205	0.293	0.0146	0.00028

SAFETY DATA SHEET

Date of issue/Date of revision **1 August 2020**
Version 7

Section 1. Identification

Product name	:	PR 188 ADH PRO
Product code	:	PR 188 ADH PRO
Other means of identification	:	Not available.
Product type	:	Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use	:	Industrial applications.
Use of the substance/ mixture	:	Sealants
Uses advised against	:	Not applicable.

Manufacturer	:	PPG Aerospace PRC-DeSoto 12780 San Fernando Road Sylmar, CA 91342 Phone: 818 362 6711
Emergency telephone number	:	(412) 434-4515 (U.S.) (514) 645-1320 (Canada) 01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	:	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 3.9% (Dermal)

GHS label elements

Hazard pictograms :

Signal word : Danger

Section 2. Hazards identification

Hazard statements : Highly flammable liquid and vapor.
Causes skin irritation.
Causes serious eye damage.
May cause respiratory irritation.
Suspected of causing cancer.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Product name : PR 188 ADH PRO

Ingredient name	%	CAS number
4-chloro-α,α,α-trifluorotoluene	≥90	98-56-6
acetone	≥1.0 - ≤5.0	67-64-1
titanium tetrabutanolate	≥1.0 - ≤5.0	5593-70-4

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation. Defatting to the skin.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
halogenated compounds
carbonyl halides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
4-chloro-α,α,α-trifluorotoluene	**IPEL (PPG).** TWA: 0.57 ppm STEL: 1.71 ppm
acetone	**ACGIH TLV (United States, 3/2019).** STEL: 500 ppm 15 minutes. TWA: 250 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 2400 mg/m³ 8 hours. TWA: 1000 ppm 8 hours.
titanium tetrabutanolate	None.

Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles and face shield.

Skin protection

Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : For prolonged or repeated handling, use the following type of gloves:

Recommended: butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Blue.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : >37.78°C (>100°F)

Flash point : Closed cup: 16.67°C (62°F)

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Evaporation rate : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1.28

Density (lbs / gal) : 10.68

Solubility : Insoluble in the following materials: cold water.

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water : Not available.

Viscosity : Kinematic (40°C (104°F)): >0.21 cm^2/s (>21 cSt)

VOC : 0

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
4-chloro-α,α,α-trifluorotoluene	LC50 Inhalation Vapor	Rat	33080 mg/m³	4 hours
	LD50 Dermal	Rabbit	>2.7 g/kg	-
	LD50 Oral	Rat	13 g/kg	-
acetone	LC50 Inhalation Vapor	Rat	76000 mg/m³	4 hours
	LD50 Dermal	Rabbit	15.8 g/kg	-
	LD50 Oral	Rat	5800 mg/kg	-
titanium tetrabutanolate	LC50 Inhalation Dusts and mists	Rat	>11 mg/l	4 hours
	LD50 Oral	Rat	3122 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Section 11. Toxicological information

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
4-chloro-α,α,α-trifluorotoluene	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
4-chloro-α,α,α-trifluorotoluene	Category 3	-	Respiratory tract irritation
acetone	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which causes damage to the following organs: brain, central nervous system (CNS).
Contains material which may cause damage to the following organs: liver, gastrointestinal tract, upper respiratory tract, skin, adrenal, eye, lens or cornea.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye damage.
Inhalation : May cause respiratory irritation.
Skin contact : Causes skin irritation. Defatting to the skin.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Section 11. Toxicological information

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
PR 188 ADH PRO	79642.9	2743.6	N/A	N/A	N/A
4-chloro-α,α,α-trifluorotoluene	13000	2500	N/A	33.08	N/A
acetone	5800	15800	N/A	76	N/A
titanium tetrabutanolate	3122	N/A	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
acetone	Acute LC50 4.42589 ml/L Marine water	Crustaceans - Acartia tonsa - Copepodid	48 hours
	Acute LC50 5540 mg/l	Fish	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
acetone	-	90.9 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
acetone	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
acetone	-0.24	3	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been

Section 13. Disposal considerations

cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN1993	UN1993	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (4-chloro-α,α,α-trifluorotoluene, acetone)	FLAMMABLE LIQUID, N.O.S. (4-chloro-α,α,α-trifluorotoluene, acetone)	FLAMMABLE LIQUID, N.O.S. (4-chloro-α,α,α-trifluorotoluene, acetone)
Transport hazard class (es)	3	3	3
Packing group	II	II	II
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

Additional information

DOT : None identified.
IMDG : None identified.
IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are active or exempted.

United States - TSCA 12(b) - Chemical export notification:
4-chloro-α,α,α-trifluorotoluene — One time notification

United States - TSCA 5(a)2 - Final significant new use rules:
4-chloro-α,α,α-trifluorotoluene — Listed — 40 CFR 799.5089

SARA 302/304

Section 15. Regulatory information

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 2
SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
4-chloro-α,α,α-trifluorotoluene	≥90	FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Defatting irritant
acetone	≥1.0 - ≤5.0	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
titanium tetrabutanolate	≥1.0 - ≤5.0	SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1

California Prop. 65

⚠ **WARNING**: Cancer - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 3 * **Flammability** : 3 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 3 **Flammability** : 3 **Instability** : 0

Date of previous issue : **6/16/2020**

Organization that prepared the MSDS : EHS

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision **3 September 2020**

Version 3

Section 1. Identification

Product name : PR 182 PNK ADH PRO

Product code : PR 182 PNK ADH PRO

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications.

Use of the substance/ mixture : Coating.

Uses advised against : Not applicable.

Manufacturer : PPG Aerospace PRC-DeSoto
12780 San Fernando Road
Sylmar, CA 91342
Phone: 818 362 6711

Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 2.3% (oral), 2.3% (dermal), 2.3% (inhalation)

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Section 2. Hazards identification

Disposal : Not applicable.

Supplemental label elements : Emits toxic fumes when heated.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Product name : PR 182 PNK ADH PRO

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Section 4. First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety glasses with side shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Pink

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : 100°C (212°F)

Flash point : Closed cup: 98.89°C (210°F)

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Evaporation rate : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1

Density (lbs / gal) : 8.35

Solubility : Insoluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not available.

Section 9. Physical and chemical properties

Viscosity	:	Kinematic (40°C (104°F)): >0.21 cm^2/s (>21 cSt)
VOC	:	30 g/l
% Solid. (w/w)	:	97

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	:	Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Hazardous decomposition products	:	Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Section 11. Toxicological information

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.
Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.
Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class (es)	-	-	-
Packing group	-	-	-
Environmental hazards **Marine pollutant substances**	No. Not applicable.	No. Not applicable.	No. Not applicable.

14. Transport information

Additional information

DOT : None identified.
IMDG : None identified.
IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are active or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

No products were found.

California Prop. 65

⚠ **WARNING**: Reproductive Harm - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 1 * **Flammability** : 1 **Physical hazards** : 0
(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 1 **Flammability** : 1 **Instability** : 0

Date of previous issue : **9/26/2018**

Organization that prepared the MSDS : EHS

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision **24 June 2020**

Version 14

Section 1. Identification

Product name	:	PR 2001 B 2 Part A
Product code	:	PR 2001 B 2 Part A
Other means of identification	:	Not available.
Product type	:	Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use	:	Industrial applications.
Use of the substance/ mixture	:	Sealants
Uses advised against	:	Not applicable.

Manufacturer	:	PPG Aerospace PRC-DeSoto 12780 San Fernando Road Sylmar, CA 91342 Phone: 818 362 6711
Emergency telephone number	:	(412) 434-4515 (U.S.) (514) 645-1320 (Canada) 01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	:	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 24.4% (Oral), 33.1% (Dermal), 96.3% (Inhalation)

GHS label elements

Hazard pictograms :

Signal word : Warning

Section 2. Hazards identification

Hazard statements : Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of causing cancer.

Precautionary statements

Prevention : Obtain special instructions before use. Wear protective gloves. Wear protective clothing. Wear eye or face protection. Avoid breathing vapor. Wash thoroughly after handling.

Response : IF exposed or concerned: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Trimethoxysilanes are capable of forming methanol if hydrolyzed or ingested. If swallowed, methanol may be harmful or fatal or cause blindness. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Product name : PR 2001 B 2 Part A

Ingredient name	%	CAS number
calcium carbonate	≥20 - ≤50	471-34-1
Phenol, polymer with formaldehyde, glycidyl ether (MW<=700)	≥20 - ≤50	28064-14-4
bis-[4-(2,3-epoxipropoxi)phenyl]propane	≥20 - ≤50	1675-54-3
Terphenyl, hydrogenated	≥5.0 - ≤10	61788-32-7
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	≥1.0 - <3.0	2530-83-8
Polyphenyls, quater- and higher, partially hydrogenated	≥1.0 - ≤5.0	68956-74-1
carbon black, respirable powder	<1.0	1333-86-4

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store below the following temperature: 5°C (41°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
calcium carbonate	**ACGIH TLV (United States).** TWA: 3 mg/m³ Form: Respirable TWA: 10 mg/m³ Form: Total dust **OSHA PEL (United States).** TWA: 5 mg/m³ Form: Respirable TWA: 15 mg/m³
Phenol, polymer with formaldehyde, glycidyl ether (MW<=700)	None.
bis-[4-(2,3-epoxipropoxi)phenyl]propane	None.
Terphenyl, hydrogenated	**ACGIH TLV (United States, 3/2019).** TWA: 4.9 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours.
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	None.
Polyphenyls, quater- and higher, partially hydrogenated	None.
carbon black, respirable powder	**ACGIH TLV (United States, 3/2019).** TWA: 3 mg/m³ 8 hours. Form: Inhalable fraction **OSHA PEL (United States, 5/2018).** TWA: 3.5 mg/m³ 8 hours.

Section 8. Exposure controls/personal protection

Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Black.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : 260 to 340°C (500 to 644°F)

Flash point : Closed cup: 93.33°C (200°F)

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Evaporation rate : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1.45

Density (lbs / gal) : 12.1

Solubility : Insoluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not available.

Viscosity : Kinematic (40°C (104°F)): >0.21 cm^2/s (>21 cSt)

VOC : 1 g/l

% Solid. (w/w) : 99.99

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Section 10. Stability and reactivity

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
calcium carbonate	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	6450 mg/kg	-
bis-[4-(2,3-epoxipropoxi) phenyl]propane	LD50 Dermal	Rabbit	23000 mg/kg	-
	LD50 Oral	Rat	15000 mg/kg	-
Terphenyl, hydrogenated	LD50 Oral	Rat	17500 mg/kg	-
[3-(2,3-epoxypropoxy)propyl] trimethoxysilane	LC50 Inhalation Dusts and mists	Rat	>5300 mg/m³	4 hours
	LD50 Dermal	Rabbit	4.3 g/kg	-
	LD50 Oral	Rat	7.01 g/kg	-
carbon black, respirable powder	LD50 Dermal	Rabbit	>3 g/kg	-
	LD50 Oral	Rat	>15400 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
bis-[4-(2,3-epoxipropoxi) phenyl]propane	Eyes - Redness of the conjunctivae	Rabbit	0.4	24 hours	-
	Eyes - Mild irritant	Rabbit	-	24 hours	-
	Skin - Erythema/Eschar	Rabbit	0.8	4 hours	-
	Skin - Edema	Rabbit	0.5	4 hours	-
	Skin - Mild irritant	Rabbit	-	4 hours	-
[3-(2,3-epoxypropoxy)propyl] trimethoxysilane	Eyes - Cornea opacity	Rabbit	11.8	1 minutes	24 hours

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
bis-[4-(2,3-epoxipropoxi) phenyl]propane	skin	Mouse	Sensitizing

Conclusion/Summary

Section 11. Toxicological information

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
bis-[4-(2,3-epoxipropoxi) phenyl]propane	-	3	-
carbon black, respirable powder	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which causes damage to the following organs: skin, eyes, central nervous system (CNS).
Contains material which may cause damage to the following organs: kidneys, liver, spleen, lymphatic system, upper respiratory tract, bone marrow.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 11. Toxicological information

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Trimethoxysilanes are capable of forming methanol if hydrolyzed or ingested. If swallowed, methanol may be harmful or fatal or cause blindness. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
PR 2001 B 2 Part A	N/A	4004.2	N/A	N/A	N/A
calcium carbonate	6450	2500	N/A	N/A	N/A
bis-[4-(2,3-epoxipropoxi)phenyl]propane	15000	23000	N/A	N/A	N/A
Terphenyl, hydrogenated	17500	N/A	N/A	N/A	N/A
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	7010	4300	N/A	N/A	N/A
carbon black, respirable powder	N/A	2500	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
calcium carbonate	Acute EC10 >14 mg/l	Algae	72 hours
bis-[4-(2,3-epoxipropoxi) phenyl]propane	Acute LC50 1.8 mg/l Fresh water	Daphnia - daphnia magna	48 hours
	Chronic NOEC 0.3 mg/l	Daphnia	21 days
[3-(2,3-epoxypropoxy)propyl] trimethoxysilane	Acute LC50 324 mg/l	Daphnia	48 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
bis-[4-(2,3-epoxipropoxi) phenyl]propane	-	-	Not readily

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	Not regulated.	UN3082	UN3082
UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Phenol, polymer with formaldehyde, glycidyl ether (MW<=700), bis-[4-(2,3-epoxipropoxi)phenyl] propane)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Phenol, polymer with formaldehyde, glycidyl ether (MW<=700), bis-[4-(2,3-epoxipropoxi)phenyl] propane)
Transport hazard class (es)	-	9	9
Packing group	-	III	III
Environmental hazards	No.	Yes.	Yes.
Marine pollutant substances	Not applicable.	(Phenol, polymer with formaldehyde, glycidyl ether (MW<=700), bis-[4-(2,3-epoxipropoxi)phenyl] propane)	Not applicable.

Additional information

DOT : None identified.

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are active or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Section 15. Regulatory information

Classification : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
Phenol, polymer with formaldehyde, glycidyl ether (MW<=700)	≥20 - ≤50	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B
bis-[4-(2,3-epoxipropoxi)phenyl] propane	≥20 - ≤50	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B
[3-(2,3-epoxypropoxy)propyl] trimethoxysilane	≥1.0 - <3.0	SERIOUS EYE DAMAGE - Category 1
Polyphenyls, quater- and higher, partially hydrogenated	≥1.0 - ≤5.0	HNOC - Defatting irritant
carbon black, respirable powder	<1.0	COMBUSTIBLE DUSTS CARCINOGENICITY - Category 2

California Prop. 65

⚠ **WARNING**: Cancer - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 1 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability** : 1 **Instability** : 0

Date of previous issue : **5/27/2020**

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available

Section 16. Other information

SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision **18 June 2020**
Version 15

Section 1. Identification

Product name	:	PR 2001 B 2 Part B
Product code	:	PR 2001 B 2 Part B
Other means of identification	:	Not available.
Product type	:	Solid.

Relevant identified uses of the substance or mixture and uses advised against

Product use	:	Industrial applications.
Use of the substance/ mixture	:	Sealants
Uses advised against	:	Not applicable.

Manufacturer	:	PPG Aerospace PRC-DeSoto 12780 San Fernando Road Sylmar, CA 91342 Phone: 818 362 6711
Emergency telephone number	:	(412) 434-4515 (U.S.) (514) 645-1320 (Canada) 01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	:	CARCINOGENICITY - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 59.7% (Oral), 65.2% (Dermal), 88.9% (Inhalation)

GHS label elements

Hazard pictograms :

Signal word	:	Warning
Hazard statements	:	Suspected of causing cancer.

Precautionary statements

Section 2. Hazards identification

Prevention : Obtain special instructions before use. Wear protective gloves. Wear protective clothing. Wear eye or face protection.

Response : IF exposed or concerned: Get medical advice or attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Emits toxic fumes when heated.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Product name : PR 2001 B 2 Part B

Ingredient name	%	CAS number
calcium carbonate	≥20 - ≤43	471-34-1
aluminium hydroxide	≥5.0 - ≤10	21645-51-2
titanium dioxide	≤1.0	13463-67-7

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Section 4. First aid measures

Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments : No specific treatment.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.
Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store below the following temperature: 5°C (41°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
calcium carbonate	**ACGIH TLV (United States).** TWA: 3 mg/m³ Form: Respirable TWA: 10 mg/m³ Form: Total dust **OSHA PEL (United States).** TWA: 5 mg/m³ Form: Respirable TWA: 15 mg/m³
aluminium hydroxide	**ACGIH TLV (United States, 3/2019).** TWA: 1 mg/m³ 8 hours. Form: Respirable fraction **ACGIH TLV (United States).** TWA: 1 mg/m³
titanium dioxide	**OSHA PEL (United States, 5/2018).** TWA: 15 mg/m³ 8 hours. Form: Total dust **ACGIH TLV (United States, 3/2019).** TWA: 10 mg/m³ 8 hours.

Key to abbreviations

A = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists.
C = Ceiling Limit
F = Fume
IPEL = Internal Permissible Exposure Limit
OSHA = Occupational Safety and Health Administration.
R = Respirable
Z = OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances
S = Potential skin absorption
SR = Respiratory sensitization
SS = Skin sensitization
STEL = Short term Exposure limit values
TD = Total dust
TLV = Threshold Limit Value
TWA = Time Weighted Average

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

Eye/face protection : Safety glasses with side shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : For prolonged or repeated handling, use the following type of gloves:

Recommended: natural rubber (latex)

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state : Solid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : Not available.

Flash point : Closed cup: 93.33°C (200°F)

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Evaporation rate : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1.42

Density (lbs / gal) : 11.85

Solubility : Insoluble in the following materials: cold water.

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water : Not available.

Viscosity : Kinematic (40°C (104°F)): Not applicable.

VOC : 1 g/l

% Solid. (w/w) : 99.99

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
calcium carbonate	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	6450 mg/kg	-
aluminium hydroxide	LC50 Inhalation Dusts and mists	Rat	>5.09 mg/l	4 hours
	LD50 Oral	Rat	>5000 mg/kg	-
titanium dioxide	LC50 Inhalation Dusts and mists	Rat	>6.82 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Section 11. Toxicological information

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
titanium dioxide	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which may cause damage to the following organs: lungs, the nervous system, upper respiratory tract, skin, eyes.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Section 11. Toxicological information

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
PR 2001 B 2 Part B	N/A	2979.7	N/A	N/A	N/A
calcium carbonate	6450	2500	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
calcium carbonate	Acute EC10 >14 mg/l	Algae	72 hours
titanium dioxide	Acute LC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class (es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

Additional information

DOT : None identified.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are active or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : CARCINOGENICITY - Category 2

Composition/information on ingredients

Name	%	Classification
titanium dioxide	≤1.0	CARCINOGENICITY - Category 2

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 1 * **Flammability** : 1 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 1 **Flammability** : 1 **Instability** : 0

Date of previous issue : **7/25/2019**

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

Section 16. Other information

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision **24 June 2020**
Version 20

Section 1. Identification

Product name	:	PR 1826 B 2 Part A
Product code	:	PR 1826 B 2 Part A
Other means of identification	:	Not available.
Product type	:	Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use	:	Industrial applications.
Use of the substance/ mixture	:	Sealants
Uses advised against	:	Not applicable.

Manufacturer	:	PPG Aerospace PRC-DeSoto 12780 San Fernando Road Sylmar, CA 91342 Phone: 818 362 6711
Emergency telephone number	:	(412) 434-4515 (U.S.) (514) 645-1320 (Canada) 01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	:	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 27.4% (Oral), 27.4% (Dermal), 96.1% (Inhalation)

GHS label elements

Hazard pictograms :

Signal word : Warning

Section 2. Hazards identification

Hazard statements : Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of causing cancer.

Precautionary statements

Prevention : Obtain special instructions before use. Wear protective gloves. Wear protective clothing. Wear eye or face protection. Avoid breathing vapor. Wash thoroughly after handling.

Response : IF exposed or concerned: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Sanding and grinding dusts may be harmful if inhaled. Trimethoxysilanes are capable of forming methanol if hydrolyzed or ingested. If swallowed, methanol may be harmful or fatal or cause blindness. Emits toxic fumes when heated.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Product name : PR 1826 B 2 Part A

Ingredient name	%	CAS number
bis-[4-(2,3-epoxipropoxi)phenyl]propane	≥20 - ≤50	1675-54-3
Phenol, polymer with formaldehyde, glycidyl ether (MW<=700)	≥20 - ≤50	28064-14-4
calcium carbonate	≥20 - ≤27	471-34-1
carbon black, respirable powder	≥1.0 - ≤6.6	1333-86-4
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	≥0.10 - ≤2.9	2530-83-8

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store below the following temperature: 5°C (41°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
bis-[4-(2,3-epoxipropoxi)phenyl]propane	None.
Phenol, polymer with formaldehyde, glycidyl ether (MW<=700)	None.
calcium carbonate	**ACGIH TLV (United States).** TWA: 3 mg/m³ Form: Respirable TWA: 10 mg/m³ Form: Total dust **OSHA PEL (United States).** TWA: 5 mg/m³ Form: Respirable TWA: 15 mg/m³
carbon black, respirable powder	**ACGIH TLV (United States, 3/2019).** TWA: 3 mg/m³ 8 hours. Form: Inhalable fraction **OSHA PEL (United States, 5/2018).** TWA: 3.5 mg/m³ 8 hours.
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	None.

Key to abbreviations

A = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists.
C = Ceiling Limit
S = Potential skin absorption
SR = Respiratory sensitization
SS = Skin sensitization

Section 8. Exposure controls/personal protection

F = Fume
IPEL = Internal Permissible Exposure Limit
OSHA = Occupational Safety and Health Administration.
R = Respirable
Z = OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances
STEL = Short term Exposure limit values
TD = Total dust
TLV = Threshold Limit Value
TWA = Time Weighted Average

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state	:	Liquid.
Color	:	Black.
Odor	:	Not available.
Odor threshold	:	Not available.
pH	:	Not available.
Melting point	:	Not available.
Boiling point	:	>37.78°C (>100°F)
Flash point	:	Closed cup: Not applicable.
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
Flammability (solid, gas)	:	Not available.
Lower and upper explosive (flammable) limits	:	Not available.
Evaporation rate	:	Not available.
Vapor pressure	:	Not available.
Vapor density	:	Not available.
Relative density	:	1.36
Density (lbs / gal)	:	11.35
Solubility	:	Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	:	Not available.
Viscosity	:	Kinematic (40°C (104°F)): >0.21 cm^2/s (>21 cSt)
VOC	:	1 g/l
% Solid. (w/w)	:	99.9

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	:	Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Hazardous decomposition products	:	Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
bis-[4-(2,3-epoxipropoxi) phenyl]propane	LD50 Dermal	Rabbit	23000 mg/kg	-
	LD50 Oral	Rat	15000 mg/kg	-
calcium carbonate	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	6450 mg/kg	-
carbon black, respirable powder	LD50 Dermal	Rabbit	>3 g/kg	-
	LD50 Oral	Rat	>15400 mg/kg	-
[3-(2,3-epoxypropoxy)propyl] trimethoxysilane	LC50 Inhalation Dusts and mists	Rat	>5300 mg/m³	4 hours
	LD50 Dermal	Rabbit	4.3 g/kg	-
	LD50 Oral	Rat	7.01 g/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
bis-[4-(2,3-epoxipropoxi) phenyl]propane	Eyes - Redness of the conjunctivae	Rabbit	0.4	24 hours	-
	Eyes - Mild irritant	Rabbit	-	24 hours	-
	Skin - Erythema/Eschar	Rabbit	0.8	4 hours	-
	Skin - Edema	Rabbit	0.5	4 hours	-
	Skin - Mild irritant	Rabbit	-	4 hours	-
[3-(2,3-epoxypropoxy)propyl] trimethoxysilane	Eyes - Cornea opacity	Rabbit	11.8	1 minutes	24 hours

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
bis-[4-(2,3-epoxipropoxi) phenyl]propane	skin	Mouse	Sensitizing

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Section 11. Toxicological information

Product/ingredient name	OSHA	IARC	NTP
bis-[4-(2,3-epoxipropoxi) phenyl]propane	-	3	-
carbon black, respirable powder	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which causes damage to the following organs: skin, eyes. Contains material which may cause damage to the following organs: lungs, upper respiratory tract.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation. May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
irritation
redness
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Section 11. Toxicological information

Conclusion/Summary : There are no data available on the mixture itself. Trimethoxysilanes are capable of forming methanol if hydrolyzed or ingested. If swallowed, methanol may be harmful or fatal or cause blindness. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
PR 1826 B 2 Part A	N/A	6258.3	N/A	N/A	N/A
bis-[4-(2,3-epoxipropoxi)phenyl]propane	15000	23000	N/A	N/A	N/A
calcium carbonate	6450	2500	N/A	N/A	N/A
carbon black, respirable powder	N/A	2500	N/A	N/A	N/A
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	7010	4300	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
bis-[4-(2,3-epoxipropoxi) phenyl]propane	Acute LC50 1.8 mg/l Fresh water	Daphnia - daphnia magna	48 hours
	Chronic NOEC 0.3 mg/l	Daphnia	21 days
calcium carbonate	Acute EC10 >14 mg/l	Algae	72 hours
[3-(2,3-epoxypropoxy)propyl] trimethoxysilane	Acute LC50 324 mg/l	Daphnia	48 hours

Section 12. Ecological information

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
bis-[4-(2,3-epoxipropoxi) phenyl]propane	-	-	Not readily

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	Not regulated.	UN3082	UN3082
UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxipropoxi) phenyl]propane, Phenol, polymer with formaldehyde, glycidyl ether (MW<=700))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis-[4-(2,3-epoxipropoxi) phenyl]propane, Phenol, polymer with formaldehyde, glycidyl ether (MW<=700))
Transport hazard class (es)	-	9	9
Packing group	-	III	III

14. Transport information

Environmental hazards	No.	Yes.	Yes.
Marine pollutant substances	Not applicable.	(bis-[4-(2,3-epoxipropoxi) phenyl]propane, Phenol, polymer with formaldehyde, glycidyl ether (MW<=700))	Not applicable.

Additional information

DOT : None identified.

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are active or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2

Composition/information on ingredients

Name	%	Classification
bis-[4-(2,3-epoxipropoxi)phenyl] propane	≥20 - ≤50	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B
Phenol, polymer with formaldehyde, glycidyl ether (MW<=700)	≥20 - ≤50	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B
carbon black, respirable powder	≥1.0 - ≤6.6	COMBUSTIBLE DUSTS CARCINOGENICITY - Category 2
[3-(2,3-epoxypropoxy)propyl] trimethoxysilane	≥0.10 - ≤2.9	SERIOUS EYE DAMAGE - Category 1

Section 15. Regulatory information

California Prop. 65

⚠ **WARNING**: Cancer - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 0 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability** : 0 **Instability** : 0

Date of previous issue : **5/19/2020**

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision **29 July 2020**

Version 14

Section 1. Identification

Product name	:	PR 1826 B 2 Part B
Product code	:	PR 1826 B 2 Part B
Other means of identification	:	Not available.
Product type	:	Solid.

Relevant identified uses of the substance or mixture and uses advised against

Product use	:	Industrial applications.
Use of the substance/ mixture	:	Sealants
Uses advised against	:	Not applicable.

Manufacturer	:	PPG Aerospace PRC-DeSoto 12780 San Fernando Road Sylmar, CA 91342 Phone: 818 362 6711
Emergency telephone number	:	(412) 434-4515 (U.S.) (514) 645-1320 (Canada) 01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	:	SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 71.1% (Dermal), 83.7% (Inhalation)

GHS label elements

Hazard pictograms :

Signal word	:	Warning
Hazard statements	:	May cause an allergic skin reaction. Suspected of causing cancer.

Precautionary statements

Section 2. Hazards identification

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Avoid breathing dust. Contaminated work clothing must not be allowed out of the workplace.

Response : IF exposed or concerned: Get medical advice or attention. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Product name : PR 1826 B 2 Part B

Ingredient name	%	CAS number
calcium carbonate	≥20 - ≤36	471-34-1
aluminium hydroxide	≥10 - ≤20	21645-51-2
butanone	≥1.0 - ≤5.0	78-93-3
titanium dioxide	≥1.0 - ≤5.0	13463-67-7
2,2'-thiodiethanethiol	<1.0	3570-55-6

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Section 4. First aid measures

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
sulfur oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Section 5. Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Do not store below the following temperature: 5°C (41°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
calcium carbonate	**ACGIH TLV (United States).** TWA: 3 mg/m³ Form: Respirable TWA: 10 mg/m³ Form: Total dust **OSHA PEL (United States).** TWA: 5 mg/m³ Form: Respirable TWA: 15 mg/m³
aluminium hydroxide	**ACGIH TLV (United States, 3/2019).** TWA: 1 mg/m³ 8 hours. Form: Respirable fraction **ACGIH TLV (United States).** TWA: 1 mg/m³
butanone	**ACGIH TLV (United States, 3/2019).** STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours.
titanium dioxide	**OSHA PEL (United States, 5/2018).** TWA: 15 mg/m³ 8 hours. Form: Total dust **ACGIH TLV (United States, 3/2019).** TWA: 10 mg/m³ 8 hours.
2,2'-thiodiethanethiol	None.

Key to abbreviations

A = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists.
C = Ceiling Limit
F = Fume
IPEL = Internal Permissible Exposure Limit
OSHA = Occupational Safety and Health Administration.
R = Respirable
Z = OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances
S = Potential skin absorption
SR = Respiratory sensitization
SS = Skin sensitization
STEL = Short term Exposure limit values
TD = Total dust
TLV = Threshold Limit Value
TWA = Time Weighted Average

Consult local authorities for acceptable exposure limits.

Section 8. Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety glasses with side shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state	: Solid.
Color	: White.
Odor	: Not available.
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Closed cup: 65.56°C (150°F)
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Evaporation rate	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 1.45
Density (lbs / gal)	: 12.1
Solubility	: Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	: Not available.
Viscosity	: Kinematic (40°C (104°F)): Not applicable.
VOC	: 1 g/l
% Solid. (w/w)	: 99

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Hazardous decomposition products	: Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
calcium carbonate	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	6450 mg/kg	-
aluminium hydroxide	LC50 Inhalation Dusts and mists	Rat	>5.09 mg/l	4 hours
	LD50 Oral	Rat	>5000 mg/kg	-
butanone	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-
titanium dioxide	LC50 Inhalation Dusts and mists	Rat	>6.82 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
2,2'-thiodiethanethiol	LD50 Oral	Rat	200 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin : **1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with 2-(5-hexenylthio) ethanol, 2-mercaptoethanol-propylene oxide reaction products, 2,2'-thiobis (ethanol) and 2,2'-thiobis(ethanethiol)**: On basis of test data: Non-irritating to the skin.

Eyes : **1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with 2-(5-hexenylthio) ethanol, 2-mercaptoethanol-propylene oxide reaction products, 2,2'-thiobis (ethanol) and 2,2'-thiobis(ethanethiol)**: On basis of test data: Non-irritating to the eyes.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : **1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with 2-(5-hexenylthio) ethanol, 2-mercaptoethanol-propylene oxide reaction products, 2,2'-thiobis (ethanol) and 2,2'-thiobis(ethanethiol)**: On basis of test data: Non-sensitizer to skin.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : **1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with 2-(5-hexenylthio) ethanol, 2-mercaptoethanol-propylene oxide reaction products, 2,2'-thiobis (ethanol) and 2,2'-thiobis(ethanethiol)**: Not mutagenic in Ames test.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
titanium dioxide	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Section 11. Toxicological information

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
butanone	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which causes damage to the following organs: brain.
Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, peripheral nervous system, upper respiratory tract, skin, eyes, central nervous system (CNS).

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Section 11. Toxicological information

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
PR 1826 B 2 Part B	81469.2	3370	N/A	N/A	N/A
calcium carbonate	6450	2500	N/A	N/A	N/A
butanone	2737	6480	N/A	N/A	N/A
2,2'-thiodiethanethiol	200	N/A	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
calcium carbonate	Acute EC10 >14 mg/l	Algae	72 hours
titanium dioxide	Acute LC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
2,2'-thiodiethanethiol	Acute LC50 0.12 mg/l	Fish	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2,2'-thiodiethanethiol	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
butanone	0.29	-	low

Section 12. Ecological information

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class (es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

Additional information

DOT : None identified.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14. Transport information

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are active or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
butanone	≥1.0 - ≤5.0	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
titanium dioxide	≥1.0 - ≤5.0	CARCINOGENICITY - Category 2
2,2'-thiodiethanethiol	<1.0	ACUTE TOXICITY (oral) - Category 3 SKIN SENSITIZATION - Category 1A

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 2 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability** : 2 **Instability** : 0

Date of previous issue : **6/24/2020**

Organization that prepared the MSDS : EHS

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Randolph Products Company

MIL-A-6091 ALC. DENATURED, UN 1987-GAL.

Date Printed: 7/2/2015

1. Product and Company Identification

Product Name : MIL-A-6091 ALC. DENATURED, UN 1987-GAL.
Product Code : 6091-GL
Recommended Use: Please refer to Product Information/Technical Data Sheet.

Company Identification:
Randolph Products Company
33 Haynes Circle
Chicopee, MA 01020

Information Phone: 413-592-4191
Emergency Phone: ChemTel 800-255-3924

2. Hazards Identification

EMERGENCY OVERVIEW

DANGER
Highly Flammable Liquid & Vapor, Category 2
Acute Toxicity, Category 4
Skin Irritation, Category 2
Eye Irritation, Category 2B

Chronic Toxicity, Aspiration Hazard, Category 1

Potential Health Effects
Eye:
Causes eye irritation.
Skin:

Causes skin irritation.

Ingestion:

Contains METHANOL - may be fatal or cause blindness if swallowed; cannot be made non-poisonous. If swallowed, call a poison control center or physician if you feel unwell. Rinse mouth.

Inhalation:

May cause drowsiness or dizziness.

Chronic (Cancer) Information:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probably, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at leveles greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA: No component of this product present at leveles greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP: No component of this product present at leveles greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Teratology (Birth Defects) Information:

INFORMATION NOT AVAILABLE.

Reproduction Information:

INFORMATION NOT AVAILABLE.

Aggravation of Pre-Existing Conditions:

Dermititis or other skin conditions.

3. Composition/Information on Ingredients

Component	CAS#	% by Wt.
ETHYL ALCOHOL	64-17-5	94
ACGIH TLV: 1000 PPM TWA		
OSHA PEL: 1000 PPM TWA		
+ METHANOL	67-56-1	4
ACGIH TLV: 200 PPM TWA (SKIN)		
ACGIH TLV: 250 PPM STEL (SKIN)		
OSHA PEL: 200 PPM TWA		
*+# METHYL ISOBUTYL KETONE	108-10-1	2
ACGIH TLV: 50 PPM TWA		
ACGIH TLV: 75 PPM STEL		
OSHA PEL: 100 PPM TWA		

4. First Aid Measures

Eyes:
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Skin:
If on skin: wash with plenty of soap & water. If skin irritation occurs: Get Medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Ingestion:
If swallowed: Immediately call a poison center/physician.
Do NOT induce vomiting.

Inhalation:
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Call a poison control center/get medical attention if you feel unwell.

Note to Physicians:
INFORMATION NOT AVAILABLE.

5. Fire Fighting Measures

Flammable Properties:
Flash Point: 50 F Method:
Explosive Limits:
Lower explosive limit: 1.4
Upper explosive limit: 36.5

Autoignition Temperature:
INFORMATION NOT AVAILABLE.
Hazardous Combustion Products:
Smoke, soot and carbon dioxide, carbon monoxide.
Extinguishing Media:
Dry chemical, CO_2, Halon, Foam
Firefighting Procedures:
Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.
Unusual Fire and Explosion Hazards: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water spray. Vapors are heavier than air and can travel some distance away and flash back.
Sensitivity to Static Discharge: Material may accumulate a static charge which could act as an ignition source.

Precautions should be taken when pouring to minimize splash/free fall.

6. Accidental Release Measures

Small Spill:
See Information for Large Spill, below:
Large Spill:
Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental Precautions:
INFORMATION NOT AVAILABLE.
Methods/Materials for Containment and Cleaning Up:
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/state/federal regulations.

7. Handling and Storage

Handling:
Keep away from heat, sparks, open flames, hot surfaces. NO SMOKING. Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/processing equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.

Storage:
Prevent unauthorized access.
Store in a well ventilated place.
Keep container tightly closed.
Keep cool.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
SEE SECTION 3 FOR THIS INFORMATION
Engineering Controls:
Ventilation: Good general ventilation (typically 10 air changes per hour) should be used.
Ventilation rates should be matched to conditions.
Ventilation should be explosion proof.

Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special
circumstances such as poorly ventilated spaces, spray painting, mechanical generation of dusts, heating, drying, etc.

Personal Protective Equipment

Respiratory Protection:
If engineering controls do not maintain airborne concentrations to an acceptable level, an approved respirator must be
worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance
with OSHA Standard 63 CFR 1152, January 8, 1998. Respirator type: Organic Vapor.

Skin Protection:
Wear impervious gloves to prevent skin contact.
Recommended Decontamination Facilities: eye bath, washing facilities, safety shower.

Eye Protection:
Chemical safety goggles or glasses with side shields.

9. Physical and Chemical Properties

Boiling Point: 148F

Melting Point:
INFORMATION NOT AVAILABLE.
Freezing Point: n/a

Vapor Pressure:
Information not available for mixture
Vapor Density:
HEAVIER THAN AIR
Solubility in Water:
NEGLIGIBLE
Evaporation Rate: SLOWER THAN ETHER

Specific Gravity: .809

Coating VOC: 6.73 lb/gl

Material VOC: 6.73 lb/gl

Odor:
Mild solvent odor.
Appearance:
Liquid.

Partition Coefficient:
INFORMATION NOT AVAILABLE.

10. Stability and Reactivity

Chemical Stability (Conditions to Avoid):
Stable under normal storage/use conditions.
Incompatibility:
Avoid strong oxidizing agents, acids and alkalies.
Hazardous Decomposition Products:
INFORMATION NOT AVAILABLE.
Hazardous Polymerization:
Will not occur under normal conditions.

11. Toxicological Information

Eye Irritation/Damage:
INFORMATION NOT AVAILABLE.
Skin Irritation/Damage:
INFORMATION NOT AVAILABLE.
Acute Oral Toxicity:
Component 108-10-1:
LD50: 2080 mg/kg, rat. Category 4

Acute Inhalation Toxicity:
INFORMATION NOT AVAILABLE.
Respiratory/Skin Sensitization:
INFORMATION NOT AVAILABLE.
Carcinogenicity:
INFORMATION NOT AVAILABLE.
Reproductive Toxicity:
INFORMATION NOT AVAILABLE.
Germ Cell Mutagenicity:
INFORMATION NOT AVAILABLE.
Aspiration Toxicity:
Component 108-10-1:
Aspiration Hazard; Category 1

STOT-single exposure
Component 108-10-1:
No data

STOT-repeated exposure
Component 108-10-1:
No data

Routes of Exposure:
Inhalation of vapors, skin/eye/mucous membrane absorption, ingestion.

12. Ecological Information

Environmental Toxicity:
Component 108-10-1:
LC50: 505 mg/l (fish); EC50: 1000 mg/l (daphnia); EC50: 980 mg/l (algae)

Persistance & degradability:
Component 108-10-1:
Readily biodegradable

Bioaccumulative potential:
Component 108-10-1:
No Data

Mobility in soil:
Component 108-10-1:
No data

Other Adverse Ecological Effects:
No information

13. Disposal Considerations

Waste Disposal Method:
Discharge, treatment or disposal is subject to national, state, or local laws. When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability. The toxicity characteristic (TC) has not been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP). Federal Regulations may apply to empty container. State and/or local regulations may be different.
Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.
Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. Transport Information

Domestic (Land, DOT), International (Water, IMO/IMDG), International (Air, ICAO)
Road and Rail (ADR/RID), Air (ICAO/IATA), Vessel (IMO/IMDG):
DOT (USA) Shipping Name: Paint
UN/NA ID No: UN1263
Hazard Class: Class 3 (IATA/49CFR)
Packing Group: II DOT (USA) Shipping Name: Alcohols, N.O.S., (Methyl, Ethyl Alcohol)
UN/NA ID No: UN1987
Hazard Class: Class 3 (IATA/49CFR)
Packing Group: II

Environmental Hazards:
INFORMATION NOT AVAILABLE.
Marine Pollutant:
Components of this product do not appear on the list of Marine Pollutants (49CFR 172.101)
Special Precautions for User:
INFORMATION NOT AVAILABLE.

15. Regulatory Information

U.S. Federal Regulations:
TSCA: All components of this material are on the
US TSCA 8(b) Inventory or are exempt from listing.

OSHA:
This product is hazardous under OSHA's Hazard Communication Std. Not regarded as a health hazard under current
legislation.

CERCLA: SARA Hazard Category:
INFORMATION NOT AVAILABLE.
Section 313:
"*" Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.
International Regulations:
Canadian WHMIS:
INFORMATION NOT AVAILABLE.
Canadian Environmental Protection Act (CEPA):
INFORMATION NOT AVAILABLE.
EINECS:
INFORMATION NOT AVAILABLE.
State Regulations:
"#" Indicates a chemical known to the state of California to cause cancer, birth defects or other reproductive harm.
"+" Indicates a Clean Air Act Hazardous Air Pollutant (HAP).

Volatile Organic Compounds:
COATING VOC content is being expressed as mass of VOC per unit volume of coating less water and exempt solvents, where applicable.
MATERIAL VOC content is the actual weight of VOC per unit volume.

16. Other Information

Date Revised: 07/02/15
Prepared By: Regulatory Compliance
Information Contact: Regulatory Compliance 413-592-4191 ext 106
Manufacturer Disclaimer:
USERS RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.
DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. These data relate only to the specific material designated herein and do not relate to use in combination with any other material. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet

1. Product and Company Identification

Product Name : ACID DILUENT (SEE SPEC FOR MIX RATIO) - QUART
Product Code : ACIDDILUE-QT
Recommended Use: Please refer to Product Information/Technical Data Sheet.

Company Identification:
Randolph Products Company
33 Haynes Circle
Chicopee, MA 01020

Information Phone: 413-592-4191
Emergency Phone: ChemTel 800-255-3924

2. Hazards Identification

EMERGENCY OVERVIEW

HAZARD CLASSIFICATION:
HIGHLY FLAMMABLE LIQUID,CATEGORY 2
ACUTE TOXICITY (ORAL), CATEGORY 3
SKIN CORROSION/IRRITATION, CATEGORY 1
EYE DAMAGE/IRRITATION, CATEGORY 1
CORROSIVE TO METALS, CATEGORY 1
SPECIFIC TARGET ORGAN TOXICITY-SINGLE EXPOSURE, CATEGORY 3 (CENTRAL NERVOUS SYSTEM)
ASPIRATION HAZARD, CATEGORY 1

SIGNAL WORD:
DANGER

HAZARD STATEMENTS:
HIGHLY FLAMMABLE LIQUID AND VAPOR
HARMFUL IF SWALLOWED

MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS
CAUSES SEVERE SKIN BURNS AND EYE DAMAGE
MAY BE CORROSIVE TO METALS
MAY CAUSE DROWSINESS OR DIZZINESS

PRECAUTIONARY STATEMENTS:
Do NOT induce vomiting.
Keep away from heat, sparks, open flame/hot surfaces.
No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting and other equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Store in a well ventilated place.
Keep cool.
Store locked up.
Do not breathe dusts or mists.
Wash hands thoroughly after handling.
Do not eat or drink while using this product.
If swallowed, immediately call a poison control center.
Rinse mouth.
Do NOT induce vomiting.
Wear protective gloves, protective clothing, eye/face protection.
If on skin, take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
If in eyes, rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: get medical attention.
If inhaled, remove person to fresh air and keep comfortable for breathing.
Keep in original container.
Absorb spillage to prevent material damage.
Store in corrosive resistant container.

Potential Health Effects

Eye:

Causes severe burns and permanent eye damage. May cause corneal opacity (clouding of eye surface). Can cause burning sensation, tearing and redness. Can cause eye irritation.

Skin:

Prolonged or repeated contact may dry the skin and lead to irritation (i.e. dermatitis). Causes severe burns and

possibly permanent skin damage. Can cause redness, itching and burning sensation. Causes skin irritation.

Ingestion:
Causes severe burns to the mouth, throat, and stomach. May cause nausea, vomiting, pain and stomach upset (e.g. diarrhea). Can cause dizziness, faintness, headache and incoordination. If swallowed, call a poison control center or physician if you feel unwell. Rinse mouth.

Inhalation:
Causes burns to the eyes, nose and respiratory tract. Can cause dizziness, breathing difficulty, headaches & loss of coordination. Nausea, vomiting, and stomach upset can occur. Can cause wheezing, coughing, shortness of breath, and tightness in the chest. May cause drowsiness or dizziness.

Chronic (Cancer) Information:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probably, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Teratology (Birth Defects) Information:
INFORMATION NOT AVAILABLE.
Reproduction Information:
INFORMATION NOT AVAILABLE.
Aggravation of Pre-Existing Conditions:
Dermititis or other skin conditions.

3. Composition/Information on Ingredients

Component	CAS#	% by Wt.
ISOPROPYL ALCOHOL	67-63-0	65
ACGIH: 200 PPM TWA		
ACGIH: 400 PPM STEL		
OSHA: 400 PPM TWA		
OSHA: 500 PPM CEILING		

PHOSPHORIC ACID	7664-38-2	16

ACGIH TLV: 1 mg/m3 TWA
ACGIH STEL: 3 mg/m3
OSHA PEL: 1 mg/m3 TWA

4. First Aid Measures

Eyes:
Immediately flush the eyes with large quantities of running water for a minimum of 15 minutes. If easy to do, remove contact lenses. Get medical attention as soon as possible. Oils or ointments should not be used at this time. Do not attempt ot neutralize with chemical agents. Continue the flushing for an additional 15 minutes if a physician is not immediately available. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Skin:
Immediately flush with plenty of water for at least 15 minutes. For large exposures use an emergency shower. Remove contaminated clothing and shoes. Get immediate medical attention. Professionally wash clothing before re-use. If on skin: wash with plenty of soap & water. If skin irritation occurs: Get Medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Ingestion:
If swallowed: Immediately call a poison center/physician.
Do NOT induce vomiting.

Inhalation:
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Call a poison control center/get medical attention if you feel unwell.

Note to Physicians:
Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy. HIGHLY ACIDIC MATERIAL! Can cause burns. There is danger of hemorrhage and perforation if lavage is performed. No attempt should be made to neutralize the acid with a base. Do not administer bicarbonate of soda by mouth.

5. Fire Fighting Measures

Flammable Properties:
Flash Point: 53 F Method:
Explosive Limits:
Lower explosive limit: 2.0
Upper explosive limit: 12.0

Autoignition Temperature:
INFORMATION NOT AVAILABLE.
Hazardous Combustion Products:
Smoke, soot and carbon dioxide, carbon monoxide.
Extinguishing Media:
Dry chemical, CO2, Halon, Foam
Firefighting Procedures:
Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.
Unusual Fire and Explosion Hazards: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water spray. Vapors are heavier than air and can travel some distance away and flash back.
Sensitivity to Static Discharge: Material may accumulate a static charge which could act as an ignition source.
Precautions should be taken when pouring to minimize splash/free fall.

6. Accidental Release Measures

Small Spill:
See Information for Large Spill, below:
Large Spill:
Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental Precautions:
INFORMATION NOT AVAILABLE.
Methods/Materials for Containment and Cleaning Up:
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/state/federal regulations.

7. Handling and Storage

Handling:
Keep away from heat, sparks, open flames, hot surfaces. NO SMOKING. Keep container tightly closed.

Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/processing equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.

Storage:
Prevent unauthorized access.
Store in a well ventilated place.
Keep container tightly closed.
Keep cool.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
SEE SECTION 3 FOR THIS INFORMATION
Engineering Controls:
Ventilation: Good general ventilation (typically 10 air changes per hour) should be used.
Ventilation rates should be matched to conditions.
Ventilation should be explosion proof.
Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special
circumstances such as poorly ventilated spaces, spray painting, mechanical generation of dusts, heating, drying, etc.

Personal Protective Equipment

Respiratory Protection:
If engineering controls do not maintain airborne concentrations to an acceptable level, an approved respirator must be
worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance
with OSHA Standard 63 CFR 1152, January 8, 1998. Respirator type: Organic Vapor.

Skin Protection:
Wear rubber boots and apron, protective clothing, and impervious gloves to prevent skin contact. An emergency shower
should be readily available.

Eye Protection:
Wear chemical splash goggles and a full-face shield. An eye wash facility should be readily available.

9. Physical and Chemical Properties

Boiling Point: 180 F

Melting Point:
INFORMATION NOT AVAILABLE.
Freezing Point: n/a

Vapor Pressure:
Information not available for mixture
Vapor Density:
HEAVIER THAN AIR
Solubility in Water:
NEGLIGIBLE
Evaporation Rate: SLOWER THAN ETHER

Specific Gravity: .908

Coating VOC: 5.96 lb/gl

Material VOC: 4.92 lb/gl

Odor:
Mild solvent odor.
Appearance:
Liquid.
Partition Coefficient:
INFORMATION NOT AVAILABLE.

10. Stability and Reactivity

Chemical Stability (Conditions to Avoid):
Stable under normal storage/use conditions.
Incompatibility:
Strong bases. Chemically active metals (i.e. nickel, cobalt, iron, copper, etc.) Amphoteric metals (i.e., copper, aluminum, zinc). Oxidizers. Acids.

Hazardous Decomposition Products:
INFORMATION NOT AVAILABLE.
Hazardous Polymerization:
Will not occur under normal conditions.

11. Toxicological Information

Eye Irritation/Damage:
Component 7664-38-2:
Serious eye damage, Category 1
Component 67-63-0:
Serious eye irritation, Category 2

Skin Irritation/Damage:

Component 7664-38-2:
LD50: 1260 mg/kg, rat. Category 4
Extrememly corrosive to skin, Category 1A
Component 67-63-0:
LD50: 12,800 mg/kg, rat. Not categorized.
Mild skin irritation, Not Categorized.

Acute Oral Toxicity:
Component 7664-38-2:
LD50: 2600 mg/kg, rat. Not categorized.
Component 67-63-0:
LD50: 5045 mg/kg, rat. Not categorized

Acute Inhalation Toxicity:
Component 7664-38-2:
LC50: 5.337 mg/l, rat. Category 3
Component 67-63-0:
LC50: 16000 ppmv, rat. Category 4

Respiratory/Skin Sensitization:
Component 7664-38-2:
No evidence of respiratory or skin sensitization.
Component 67-63-0:
No evidence of respiratory or skin sensitization.

Carcinogenicity:
Component 7664-38-2:
Not listed as a carcinogen by IARC, NTP, OSHA or ACGIH
Component 67-63-0:
Not listed as a carcinogen by IARC, NTP, OSHA or ACGIH

Reproductive Toxicity:
Component 7664-38-2:
No evidence of human reproductive toxicity.
Component 67-63-0:
No evidence of human reproductive toxicity.

Germ Cell Mutagenicity:
Component 7664-38-2:
No data
Component 67-63-0:
No data

Aspiration Toxicity:
Component 7664-38-2:
Corrosive to respiratory tract.
Component 67-63-0:
Aspiration Hazard; Category 1

STOT-single exposure
Component 7664-38-2:
No data
Component 67-63-0:
No data

STOT-repeated exposure
Component 7664-38-2:
Corrosive to respiratory system, severe digestive tract burns, severe skin burns and eye damage, harmful if inhaled,
harmful if swallowed.

Component 67-63-0:
No Data

Routes of Exposure:
Inhalation of vapors, skin/eye/mucous membrane absorption, ingestion.

12. Ecological Information

Environmental Toxicity:
Component 7664-38-2:
LC50: 75.1 mg/l (fish); EC50: 376 mg/l (daphnia); EC50: 32 mg/l (algae)
Component 67-63-0:
LC50: >1400 mg/l (fish)

Persistance & degradability:
Component 7664-38-2:
No data
Component 67-63-0:
No Data

Bioaccumulative potential:
Component 7664-38-2:
Bioaccumulation is unlikely.
Component 67-63-0:
No Data

Mobility in soil:
Component 7664-38-2:
No data
Component 67-63-0:
No data

Other Adverse Ecological Effects:
No information

Component 7664-38-2:
Harmful to aquatic life with long lasting effects.

13. Disposal Considerations

Waste Disposal Method:
Discharge, treatment or disposal is subject to national, state, or local laws. When a decision is made to discard this material as supplied, it meets RCRA's characteristic definitions of ignitability and corrosivity. The toxicity characteristic (TC) has not been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP).
Federal Regulations may apply to empty container. State and/or local regulations may be different.
Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.
Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. Transport Information

Domestic (Land, DOT), International (Water, IMO/IMDG), International (Air, ICAO)
Road and Rail (ADR/RID), Air (ICAO/IATA), Vessel (IMO/IMDG):

DOT (USA) Shipping Name: Flammable liquid, corrosive,
N.O.S. (phosphoric acid)
UN/NA ID No: UN2924
Hazard Class: Class 3,8 (IATA/49CFR)
Packing Group: II

Environmental Hazards:
INFORMATION NOT AVAILABLE.
Marine Pollutant:
Components of this product do not appear on the list of Marine Pollutants (49CFR 172.101)
Special Precautions for User:
INFORMATION NOT AVAILABLE.

15. Regulatory Information

U.S. Federal Regulations:
TSCA: All components of this material are on the
US TSCA 8(b) Inventory or are exempt from listing.

OSHA:
This product is hazardous under OSHA's Hazard Communication Std. Not regarded as a health hazard under current
legislation.

CERCLA: SARA Hazard Category:
INFORMATION NOT AVAILABLE.
Section 313:
"*" Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.
International Regulations:
Canadian WHMIS:
INFORMATION NOT AVAILABLE.
Canadian Environmental Protection Act (CEPA):
INFORMATION NOT AVAILABLE.
EINECS:
INFORMATION NOT AVAILABLE.
State Regulations:
INFORMATION NOT AVAILABLE.
Volatile Organic Compounds:
COATING VOC content is being expressed as mass of VOC per unit volume of coating less water and exempt solvents, where
applicable.
MATERIAL VOC content is the actual weight of VOC per unit volume.

16. Other Information

Date Revised: 07/09/19

Prepared By: Regulatory Compliance
Information Contact: Regulatory Compliance 413-592-4191 ext 106
Manufacturer Disclaimer:
USERS RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.
DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. These data relate only to the specific material designated herein and do not relate to use in combination with any other material. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet

SAFETY DATA SHEET

Randolph Products Company

MIL-C-8514C(1) YELLOW WASH PRIMER-GALLON

Date Printed: 5/28/2015

1. Product and Company Identification

Product Name : MIL-C-8514C(1) YELLOW WASH PRIMER-GALLON
Product Code : 8514C-A-GL
Recommended Use: Please refer to Product Information/Technical Data Sheet.

Company Identification:
Randolph Products Company
33 Haynes Circle
Chicopee, MA 01020

Information Phone: 413-592-4191
Emergency Phone: ChemTel 800-255-3924

2. Hazards Identification

EMERGENCY OVERVIEW

DANGER
Highly Flammable Liquid & Vapor, Category 2
Acute Toxicity, Category 3
Skin Irritation, Category 2
Eye Irritation, Category 2B
Chronic, Aspiration Hazard Category 1

Chronic Toxicity, Carcinogen (May cause cancer), Category 1

Potential Health Effects
Eye:
Causes eye irritation.

Skin:
Causes skin irritation.
Ingestion:
If swallowed, call a poison control center or physician if you feel unwell. Rinse mouth.
Inhalation:
CONTAINS HEXAVALENT CHROMIUM. Chromates may cause nasal septum perforation. Hexavalent Chrome is listed as a carcinogen by the IARC and NTP and is on ACGIH's A1 list. Repeated, long term exposure to dust and mists in the chromate product industries is associated with an increase in respiratory tract cancer in humans. Prolonged inhalation may cause liver damage. May cause drowsiness or dizziness.

Chronic (Cancer) Information:
Hexavalent Chrome is listed as a carcinogen by the IARC and NTP and is on ACGIH's A1 list. Repeated, long term exposure to dust and mists in the chromate product industries is associated with an increase in respiratory tract cancer in humans. IARC: A component of this product present at levels greater than or equal to 0.1% is identified as a probable, possible or confirmed human carcinogen by IARC.

ACGIH: A component of this product present at leveles greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA: No component of this product present at leveles greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP: A component of this product present at leveles greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Teratology (Birth Defects) Information:
INFORMATION NOT AVAILABLE.
Reproduction Information:
INFORMATION NOT AVAILABLE.
Aggravation of Pre-Existing Conditions:
Dermititis or other skin conditions.

3. Composition/Information on Ingredients

Component	CAS#	% by Wt.
ISOPROPYL ALCOHOL ACGIH: 200 PPM TWA ACGIH: 400 PPM STEL	67-63-0	58

OSHA: 400 PPM TWA		
OSHA: 500 PPM CEILING		
* N-BUTANOL	71-36-3	19
ACGIH: 50 PPM "SKIN" TWA		
OSHA: 50 PPM CEILING		
*#+ BASIC ZINC CHROMATE	13530-65-9	9.102
ACGIH TLV: 0.01 MG/M3 (AS CHROMIUM) TWA		
OSHA PEL: 0.005 mg/m3 TWA, Chromium (VI)		
TALC	14807-96-6	1
OSHA: 2 MG/M3		
ACGIH: 2 MG/M3		

4. First Aid Measures

Eyes:
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Skin:
If on skin: wash with plenty of soap & water. If skin irritation occurs: Get Medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Ingestion:
If swallowed: Immediately call a poison center/physician.
Do NOT induce vomiting.

Inhalation:
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Call a poison control center/get medical attention if you feel unwell.

Note to Physicians:
Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy. This product contains one or more heavy metals, or heavy metal-containing compounds. The appropriate treatment following heavy metal intoxication is specific; therefore, consult a poison control center.

5. Fire Fighting Measures

Flammable Properties:
Flash Point: 53 F Method:

Explosive Limits:
Lower explosive limit: 1.5
Upper explosive limit: 12.0

Autoignition Temperature:
INFORMATION NOT AVAILABLE.
Hazardous Combustion Products:
Smoke, soot and carbon dioxide, carbon monoxide.
Extinguishing Media:
Dry chemical, CO2, Halon, Foam
Firefighting Procedures:
Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.
Unusual Fire and Explosion Hazards: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water spray. Vapors are heavier than air and can travel some distance away and flash back.
Sensitivity to Static Discharge: Material may accumulate a static charge which could act as an ignition source.
Precautions should be taken when pouring to minimize splash/free fall.

6. Accidental Release Measures

Small Spill:
See Information for Large Spill, below:
Large Spill:
Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental Precautions:
INFORMATION NOT AVAILABLE.
Methods/Materials for Containment and Cleaning Up:
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/state/federal regulations.

7. Handling and Storage

Handling:
Keep away from heat, sparks, open flames, hot surfaces. NO SMOKING. Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/processing equipment.

Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.

Storage:
Prevent unauthorized access.
Store in a well ventilated place.
Keep container tightly closed.
Keep cool.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
SEE SECTION 3 FOR THIS INFORMATION
Engineering Controls:
Ventilation: Good general ventilation (typically 10 air changes per hour) should be used.
Ventilation rates should be matched to conditions.
Ventilation should be explosion proof.
Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special
circumstances such as poorly ventilated spaces, spray painting, mechanical generation of dusts, heating, drying, etc.

Personal Protective Equipment

Respiratory Protection:
If engineering controls do not maintain airborne concentrations to an acceptable level, an approved respirator must be
worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance
with OSHA Standard 63 CFR 1152, January 8, 1998. Respirator type: Organic Vapor.

Skin Protection:
Wear impervious gloves to prevent skin contact.
Recommended Decontamination Facilities: eye bath, washing facilities, safety shower.

Eye Protection:
Chemical safety goggles or glasses with side shields.

9. Physical and Chemical Properties

Boiling Point: 180 F

Melting Point:

INFORMATION NOT AVAILABLE.
Freezing Point: n/a

Vapor Pressure:
Information not available for mixture
Vapor Density:
HEAVIER THAN AIR
Solubility in Water:
NEGLIGIBLE
Evaporation Rate: SLOWER THAN ETHER

Specific Gravity: .893

Coating VOC: 5.91 lb/gl

Material VOC: 5.76 lb/gl

Odor:
Mild solvent odor.
Appearance:
Liquid.
Partition Coefficient:
INFORMATION NOT AVAILABLE.

10. Stability and Reactivity

Chemical Stability (Conditions to Avoid):
Stable under normal storage/use conditions.
Incompatibility:
Avoid strong oxidizing agents, acids and alkalies.
Hazardous Decomposition Products:
INFORMATION NOT AVAILABLE.
Hazardous Polymerization:
Will not occur under normal conditions.

11. Toxicological Information

Eye Irritation/Damage:
Component 13530-65-9:
Mild eye irritation, Category 2b
Component 67-63-0:
Serious eye irritation, Category 2

Skin Irritation/Damage:
Component 13530-65-9:
LD50: No data
Mild skin irritation.
Component 71-36-3:

LD50: 3,400 mg/kg, rabbit. Not categorized.
Component 67-63-0:
LD50: 12,800 mg/kg, rat. Not categorized.
Mild skin irritation, Not Categorized.

Acute Oral Toxicity:
Component 13530-65-9:
LD50: no data
Component 71-36-3:
LD50: 790 mg/kg, rat. Category 4
Component 67-63-0:
LD50: 5045 mg/kg, rat. Not categorized

Acute Inhalation Toxicity:
Component 13530-65-9:
no data
Component 67-63-0:
LC50: 16000 ppmv, rat. Category 4

Respiratory/Skin Sensitization:
Component 13530-65-9:
Caused skin sensitization in animal studies. ACUTE OR CHRONIC OVEREXPOSURE TO CHROMATES MAY CAUSE SENSITIZATION IN SOME
INDIVIDUALS, RESULTING IN ALLERGIC RESPIRATORY REACTIONS INCLUDING WHEEZING, SHORTNESS OF BREATH AND DIFFICULTY
BREATHING. ANIMAL TESTS INDICATE THAT SKIN CONTACT MAY PLAY A ROLE IN CAUSING RESPIRATORY SENSITIZATION.
Component 67-63-0:
No evidence of respiratory or skin sensitization.

Carcinogenicity:
Component 13530-65-9:
Listed by IARC as a group 1 carcinogen (carcinogenic to humans), and as a known carcinogen by NTP. GHS Category 1A.
Component 67-63-0:
Not listed as a carcinogen by IARC, NTP, OSHA or ACGIH

Reproductive Toxicity:
Component 13530-65-9:
No data
Component 67-63-0:
No evidence of human reproductive toxicity.

Germ Cell Mutagenicity:
Component 13530-65-9:
No data
Component 67-63-0:
No data

Aspiration Toxicity:
Component 13530-65-9:
Not classified as an Aspiration Hazard.
Component 71-36-3:
Not classified as an Aspiration Hazard.
Component 67-63-0:
Aspiration Hazard; Category 1

STOT-single exposure
Component 13530-65-9:
No data
Component 71-36-3:
No data Component 67-63-0:
No data

STOT-repeated exposure
Component 13530-65-9:
No data
Component 71-36-3:
No data Component 67-63-0:
No data

Routes of Exposure:
Inhalation of vapors, skin/eye/mucous membrane absorption, ingestion.

12. Ecological Information

Environmental Toxicity:
Component 13530-65-9:
No data
Component 67-63-0:
LC50: >1400 mg/l (fish)

Persistance & degradability:
Component 13530-65-9:
Not readily biodegradable
Component 67-63-0:

No Data

Bioaccumulative potential:
Component 13530-65-9:
No data
Component 67-63-0:
No Data

Mobility in soil:
Component 13530-65-9:
No data
Component 67-63-0:
No data

Other Adverse Ecological Effects:
No information

Component 13530-65-9:
Very Toxic to aquatic organisms

13. Disposal Considerations

Waste Disposal Method:
Discharge, treatment or disposal is subject to national, state, or local laws. When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of ignitability. The toxicity characteristic (TC) has not been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP). Federal Regulations may apply to empty container. State and/or local regulations may be different.
Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. Transport Information

Domestic (Land, DOT), International (Water, IMO/IMDG), International (Air, ICAO)
Road and Rail (ADR/RID), Air (ICAO/IATA), Vessel (IMO/IMDG):
DOT (USA) Shipping Name: Paint
UN/NA ID No: UN1263
Hazard Class: Class 3 (IATA/49CFR)
Packing Group: II

Environmental Hazards:
INFORMATION NOT AVAILABLE.
Marine Pollutant:
Components of this product do not appear on the list of Marine Pollutants (49CFR 172.101)
Special Precautions for User:
INFORMATION NOT AVAILABLE.

15. Regulatory Information

U.S. Federal Regulations:
TSCA: All components of this material are on the
US TSCA 8(b) Inventory or are exempt from listing.

OSHA:
This product is hazardous under OSHA's Hazard Communication Std.
CERCLA: SARA Hazard Category:
INFORMATION NOT AVAILABLE.
Section 313:
"*" Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.
International Regulations:
Canadian WHMIS:
INFORMATION NOT AVAILABLE.
Canadian Environmental Protection Act (CEPA):
INFORMATION NOT AVAILABLE.
EINECS:
INFORMATION NOT AVAILABLE.
State Regulations:
"#" Indicates a chemical known to the state of California to cause cancer, birth defects or other reproductive harm.
"+" Indicates a Clean Air Act Hazardous Air Pollutant (HAP).

Volatile Organic Compounds:

COATING VOC content is being expressed as mass of VOC per unit volume of coating less water and exempt solvents, where applicable.

MATERIAL VOC content is the actual weight of VOC per unit volume.

16. Other Information

Date Revised: 05/28/15
Prepared By: Regulatory Compliance
Information Contact: Regulatory Compliance 413-592-4191 ext 106
Manufacturer Disclaimer:
USERS RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.
DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. These data relate only to the specific material designated herein and do not relate to use in combination with any other material. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet

SAFETY DATA SHEET

E90G16

Section 1. Identification

Product name : MIL-C-8514C Pretreatment Wash Primer Transparent Green (Part A)

Product code : E90G16

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
101 W. Prospect Avenue
Cleveland, OH 44115

Emergency telephone number of the company : US / Canada: (216) 566-2917
Mexico: SETIQ 01-800-00-214-00 / (52) 55-5559-1588 24 hours / 365 days a year

Product Information Telephone Number : US / Canada: 1-844-290-6044
Mexico: Not Available

Regulatory Information Telephone Number : US / Canada: (216) 566-2902
Mexico: Not Available

Transportation Emergency Telephone Number : US / Canada: (216) 566-2917
Mexico: SETIQ 01-800-00-214-00 / (52) 55-5559-1588 24 hours / 365 days a year

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 9% (dermal), 71.3% (inhalation)

GHS label elements

Hazard pictograms :

Signal word : Danger

Section 2. Hazards identification

Hazard statements : Highly flammable liquid and vapor.
Harmful if swallowed.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
May cause drowsiness or dizziness.
May cause cancer.
Causes damage to organs through prolonged or repeated exposure. (lungs)

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY. This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
2-Propanol	≥50 - ≤75	67-63-0
1-Butanol	≥10 - <20	71-36-3
Pentazinc Chromate Octahydroxide	≤10	49663-84-5
Talc	≤3	14807-96-6
Xylene, mixed isomers	≤0.3	1330-20-7

Section 3. Composition/information on ingredients

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Section 4. First aid measures

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Ingredient name	CAS #	Exposure limits
2-Propanol	67-63-0	**ACGIH TLV (United States, 3/2020).** TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes. **NIOSH REL (United States, 10/2016).** TWA: 400 ppm 10 hours. TWA: 980 mg/m³ 10 hours. STEL: 500 ppm 15 minutes. STEL: 1225 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 400 ppm 8 hours. TWA: 980 mg/m³ 8 hours.
1-Butanol	71-36-3	**ACGIH TLV (United States, 3/2020).** TWA: 20 ppm 8 hours. **NIOSH REL (United States, 10/2016).** **Absorbed through skin.** CEIL: 50 ppm CEIL: 150 mg/m³ **OSHA PEL (United States, 5/2018).** TWA: 100 ppm 8 hours. TWA: 300 mg/m³ 8 hours.
Pentazinc Chromate Octahydroxide	49663-84-5	**ACGIH TLV (United States, 3/2020).** TWA: 0.0002 mg/m³, (measured as Cr) 8 hours. Form: Inhalable fraction STEL: 0.0005 mg/m³, (measured as Cr) 15 minutes. Form: Inhalable fraction TWA: 0.01 mg/m³, (measured as Cr) 8 hours **OSHA PEL Z2 (United States, 2/2013).** CEIL: 1 mg/10m³ **NIOSH REL (United States, 10/2016).** TWA: 0.0002 mg/m³ 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 0.005 mg/m³, (as Cr) 8 hours.
Talc	14807-96-6	**NIOSH REL (United States, 10/2016).** TWA: 2 mg/m³ 10 hours. Form: Respirable fraction **ACGIH TLV (United States, 3/2020).** TWA: 2 mg/m³ 8 hours. Form: Respirable fraction
Xylene, mixed isomers	1330-20-7	**ACGIH TLV (United States, 3/2020).** TWA: 100 ppm 8 hours. TWA: 434 mg/m³ 8 hours. STEL: 150 ppm 15 minutes.

		STEL: 651 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.

Occupational exposure limits (Canada)

Ingredient name	CAS #	Exposure limits
Isopropyl alcohol	67-63-0	**CA Alberta Provincial (Canada, 6/2018).** 15 min OEL: 984 mg/m³ 15 minutes. 8 hrs OEL: 200 ppm 8 hours. 15 min OEL: 400 ppm 15 minutes. 8 hrs OEL: 492 mg/m³ 8 hours. **CA British Columbia Provincial (Canada, 1/2020).** TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes. **CA Ontario Provincial (Canada, 6/2019).** TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes. **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 400 ppm 8 hours. TWAEV: 983 mg/m³ 8 hours. STEV: 500 ppm 15 minutes. STEV: 1230 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 400 ppm 15 minutes. TWA: 200 ppm 8 hours.
Normal butyl alcohol	71-36-3	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 60 mg/m³ 8 hours. 8 hrs OEL: 20 ppm 8 hours. **CA British Columbia Provincial (Canada, 1/2020).** TWA: 15 ppm 8 hours. C: 30 ppm **CA Ontario Provincial (Canada, 6/2019).** TWA: 20 ppm 8 hours. **CA Quebec Provincial (Canada, 7/2019). Absorbed through skin.** STEV: 50 ppm 15 minutes. STEV: 152 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 30 ppm 15 minutes. TWA: 20 ppm 8 hours.
Pentazinc Chromate Octahydroxide	49663-84-5	**CA British Columbia Provincial (Canada, 1/2020). Absorbed through skin. Skin sensitizer. Inhalation sensitizer.** C: 0.1 mg/m³, (as Cr, Total) TWA: 0.01 mg/m³, (as Cr, Total) 8 hours. **CA Ontario Provincial (Canada, 6/2019).** TWA: 0.05 mg/m³, (as Cr) 8 hours. Form: Soluble **CA Quebec Provincial (Canada, 7/2019). Skin sensitizer.** TWAEV: 0.05 mg/m³, (as Cr) 8 hours.

		CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 0.01 mg/m³, (as Cr) 8 hours. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 0.03 mg/m³, (measured as Cr) 15 minutes. TWA: 0.01 mg/m³, (measured as Cr) 8 hours.
talc (none asbestiform)	14807-96-6	**CA British Columbia Provincial (Canada, 1/2020).** TWA: 2 mg/m³ 8 hours. Form: Respirable **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 3 mg/m³ 8 hours. Form: Respirable dust. **CA Ontario Provincial (Canada, 6/2019).** TWA: 2 mg/m³ 8 hours. Form: Respirable fraction. TWA: 2 f/cc 8 hours. **CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 2 mg/m³ 8 hours. Form: Respirable particulate **CA Saskatchewan Provincial (Canada, 7/2013).** TWA: 2 mg/m³ 8 hours. Form: respirable fraction
Xylene	1330-20-7	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 100 ppm 8 hours. 15 min OEL: 651 mg/m³ 15 minutes. 15 min OEL: 150 ppm 15 minutes. 8 hrs OEL: 434 mg/m³ 8 hours. **CA British Columbia Provincial (Canada, 1/2020).** TWA: 100 ppm 8 hours. STEL: 150 ppm 15 minutes. **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 100 ppm 8 hours. TWAEV: 434 mg/m³ 8 hours. STEV: 150 ppm 15 minutes. STEV: 651 mg/m³ 15 minutes. **CA Ontario Provincial (Canada, 6/2019).** STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours.

Occupational exposure limits (Mexico)

	CAS #	Exposure limits
2-Propanol	67-63-0	**NOM-010-STPS-2014 (Mexico, 4/2016).** TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes.
1-Butanol	71-36-3	**NOM-010-STPS-2014 (Mexico, 4/2016).** **Absorbed through skin.** TWA: 20 ppm 8 hours.
Pentazinc Chromate Octahydroxide	49663-84-5	**NOM-010-STPS-2014 (Mexico, 4/2016).** TWA: 0.05 mg/m³ 8 hours. Form: soluble in

Section 8. Exposure controls/personal protection

		water

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Boiling point/boiling range : 81°C (177.8°F)

Section 9. Physical and chemical properties

Flash point	: Closed cup: 18°C (64.4°F) [Pensky-Martens Closed Cup]
Evaporation rate	: 1.44 (butyl acetate = 1)
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Lower: 1.4% Upper: 12.7%
Vapor pressure	: 4.4 kPa (33 mm Hg) [at 20°C]
Vapor density	: 2.07 [Air = 1]
Relative density	: 0.88
Solubility	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (40°C (104°F)): >0.205 cm^2/s (>20.5 cSt)
Molecular weight	: Not applicable.

Aerosol product

Heat of combustion	: 23.593 kJ/g

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-Propanol	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
1-Butanol	LC50 Inhalation Vapor	Rat	24000 mg/m^3	4 hours
	LD50 Dermal	Rabbit	3400 mg/kg	-
	LD50 Oral	Rat	790 mg/kg	-
Xylene, mixed isomers	LC50 Inhalation Gas.	Rat	6700 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
2-Propanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Eyes - Severe irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
1-Butanol	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Eyes - Severe irritant	Rabbit	-	0.005 Ml	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
Talc	Skin - Mild irritant	Human	-	72 hours 300 ug I	-
Xylene, mixed isomers	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 UI	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	100 %	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
2-Propanol	-	3	-
Pentazinc Chromate Octahydroxide	+	1	Known to be a human carcinogen.
Talc	-	3	-
Xylene, mixed isomers	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
2-Propanol	Category 3	-	Narcotic effects
1-Butanol	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects
Xylene, mixed isomers	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
1-Butanol	Category 2	-	-
Talc	Category 1	inhalation	lungs
Xylene, mixed isomers	Category 2	-	-

Aspiration hazard

Name	Result
Xylene, mixed isomers	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Causes damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Section 11. Toxicological information

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	1880.9 mg/kg
Dermal	19008.43 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2-Propanol	Acute EC50 7550 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1400000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 4200 mg/l Fresh water	Fish - Rasbora heteromorpha	96 hours
1-Butanol	Acute EC50 1983 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1730000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Xylene, mixed isomers	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2-Propanol	-	-	Readily
1-Butanol	-	-	Readily
Xylene, mixed isomers	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Pentazinc Chromate Octahydroxide	-	60960	high
Xylene, mixed isomers	-	8.1 to 25.9	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT. Marine pollutant (Pentazinc Chromate Octahydroxide)
Transport hazard class(es)	3 	3 	3 	3 	3  
Packing group	II	II	II	II	II
Environmental hazards	No.	No.	No.	Yes. The environmentally hazardous substance mark is not required.	Yes.
Additional information	- **ERG No.** 128	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3). **ERG No.** 128	- **ERG No.** 128	The environmentally hazardous substance mark may appear if required by other transportation regulations.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules** F-E, S-E

Section 14. Transport information

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to IMO instruments : Not available.

Proper shipping name : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

International regulations

International lists : **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	3
Flammability		3
Physical hazards		0

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Procedure used to derive the classification

Section 16. Other information

Classification	Justification
FLAMMABLE LIQUIDS - Category 2	On basis of test data
ACUTE TOXICITY (oral) - Category 4	Calculation method
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
CARCINOGENICITY - Category 1A	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1	Calculation method

History

Date of printing : 10/15/2020

Date of issue/Date of revision : 10/15/2020

Date of previous issue : 7/23/2020

Version : 19

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

SAFETY DATA SHEET

V93V00017

Section 1. Identification

Product name : V93V00017 MIL-C-8514C PRETREATMENT WASH PRIMER CATALYST

Product code : V93V00017

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
101 W. Prospect Avenue
Cleveland, OH 44115

Emergency telephone number of the company : US / Canada: (216) 566-2917
Mexico: SETIQ 01-800-00-214-00 / (52) 55-5559-1588 24 hours / 365 days a year

Product Information Telephone Number : US / Canada: 1-844-290-6044
Mexico: Not Available

Regulatory Information Telephone Number : US / Canada: (216) 566-2902
Mexico: Not Available

Transportation Emergency Telephone Number : US / Canada: (216) 566-2917
Mexico: SETIQ 01-800-00-214-00 / (52) 55-5559-1588 24 hours / 365 days a year

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SKIN CORROSION/IRRITATION - Category 1B
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 15.6% (dermal), 80.8% (inhalation)

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Highly flammable liquid and vapor.
Causes severe skin burns and eye damage.
May cause drowsiness or dizziness.

Precautionary statements

Section 2. Hazards identification

Prevention : Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling.

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. FOR INDUSTRIAL USE ONLY. This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
2-Propanol	≥50 - ≤75	67-63-0
Phosphoric Acid	≥10 - <20	7664-38-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Section 4. First aid measures

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes severe burns.

Ingestion : Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Section 4. First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
phosphorus oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Ingredient name	CAS #	Exposure limits
2-Propanol	67-63-0	**ACGIH TLV (United States, 3/2020).** TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes. **NIOSH REL (United States, 10/2016).** TWA: 400 ppm 10 hours. TWA: 980 mg/m³ 10 hours. STEL: 500 ppm 15 minutes. STEL: 1225 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 400 ppm 8 hours. TWA: 980 mg/m³ 8 hours.
Phosphoric Acid	7664-38-2	**ACGIH TLV (United States, 3/2020).** TWA: 1 mg/m³ 8 hours. STEL: 3 mg/m³ 15 minutes.

		NIOSH REL (United States, 10/2016). TWA: 1 mg/m³ 10 hours. STEL: 3 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 1 mg/m³ 8 hours.

Occupational exposure limits (Canada)

Ingredient name	CAS #	Exposure limits
Isopropyl alcohol	67-63-0	**CA Alberta Provincial (Canada, 6/2018).** 15 min OEL: 984 mg/m³ 15 minutes. 8 hrs OEL: 200 ppm 8 hours. 15 min OEL: 400 ppm 15 minutes. 8 hrs OEL: 492 mg/m³ 8 hours. **CA British Columbia Provincial (Canada, 1/2020).** TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes. **CA Ontario Provincial (Canada, 6/2019).** TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes. **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 400 ppm 8 hours. TWAEV: 983 mg/m³ 8 hours. STEV: 500 ppm 15 minutes. STEV: 1230 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 400 ppm 15 minutes. TWA: 200 ppm 8 hours.
Phosphoric acid aqueous solution, 35 to 85 %	7664-38-2	**CA Alberta Provincial (Canada, 6/2018).** 15 min OEL: 3 mg/m³ 15 minutes. 8 hrs OEL: 1 mg/m³ 8 hours. **CA British Columbia Provincial (Canada, 1/2020).** TWA: 1 mg/m³ 8 hours. STEL: 3 mg/m³ 15 minutes. **CA Ontario Provincial (Canada, 6/2019).** TWA: 1 mg/m³ 8 hours. STEL: 3 mg/m³ 15 minutes. **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 1 mg/m³ 8 hours. STEV: 3 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 3 mg/m³ 15 minutes. TWA: 1 mg/m³ 8 hours.

Occupational exposure limits (Mexico)

	CAS #	Exposure limits
2-Propanol	67-63-0	**NOM-010-STPS-2014 (Mexico, 4/2016).** TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes.
Phosphoric Acid	7664-38-2	**NOM-010-STPS-2014 (Mexico, 4/2016).** TWA: 1 mg/m³ 8 hours. STEL: 3 mg/m³ 15 minutes.

Section 8. Exposure controls/personal protection

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/ or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : 3.8

Melting point/freezing point : Not available.

Boiling point/boiling range : 81°C (177.8°F)

Flash point : Closed cup: 16°C (60.8°F) [Pensky-Martens Closed Cup]

Evaporation rate : 1.44 (butyl acetate = 1)

Section 9. Physical and chemical properties

Flammability (solid, gas)	:	Not available.
Lower and upper explosive (flammable) limits	:	Lower: 2% Upper: 12.7%
Vapor pressure	:	4.4 kPa (33 mm Hg) [at 20°C]
Vapor density	:	1 [Air = 1]
Relative density	:	0.9
Solubility	:	Not available.
Partition coefficient: n-octanol/water	:	Not available.
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
Viscosity	:	Kinematic (40°C (104°F)): >0.205 cm^2/s (>20.5 cSt)
Molecular weight	:	Not applicable.

Aerosol product

Heat of combustion	:	17.864 kJ/g

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	:	Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-Propanol	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
Phosphoric Acid	LD50 Oral	Rat	1.25 g/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2-Propanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Eyes - Severe irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-

Section 11. Toxicological information

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
2-Propanol	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
2-Propanol	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes severe burns.

Ingestion : Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Section 11. Toxicological information

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	3913.51 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2-Propanol	Acute EC50 7550 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1400000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 4200 mg/l Fresh water	Fish - Rasbora heteromorpha	96 hours
Phosphoric Acid	Acute EC50 105 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 60 ppm Fresh water	Fish - Lepomis macrochirus	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2-Propanol	-	-	Readily

Section 12. Ecological information

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN2924	UN2924	UN2924	UN2924	UN2924
UN proper shipping name	FLAMMABLE LIQUID, CORROSIVE, N. O.S. (2-Propanol)	FLAMMABLE LIQUID, CORROSIVE, N. O.S. (2-Propanol)	FLAMMABLE LIQUID, CORROSIVE, N. O.S. (2-Propanol)	FLAMMABLE LIQUID, CORROSIVE, N. O.S. (2-Propanol)	FLAMMABLE LIQUID, CORROSIVE, N. O.S. (2-Propanol)
Transport hazard class(es)	3 (8) 	3 (8) 	3 (8) 	3 (8) 	3 (8) 
Packing group	II	II	II	II	II
Environmental hazards	No.	No.	No.	No.	No.

Section 14. Transport information

Additional information	-	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.40-2.42 (Class 8).	-	-	**Emergency schedules** F-E, S-C
	ERG No. 132	**ERG No.** 132	**ERG No.** 132		

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to IMO instruments : Not available.

Proper shipping name : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

Not applicable.

International regulations

International lists : **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	3
Flammability	3
Physical hazards	4

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 2	On basis of test data
SKIN CORROSION/IRRITATION - Category 1B	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method

History

Date of printing : 10/15/2020

Date of issue/Date of revision : 10/15/2020

Date of previous issue : 5/14/2020

Version : 7

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user

Section 16. Other information

should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

SAFETY DATA SHEET

Date of issue/Date of revision **23 March 2018**

Version 9.01

Section 1. Identification

Product name	:	910-702 ACTIVATOR COMPONENT
Product code	:	910-702 ACTIVATOR COMPONENT
Other means of identification	:	Not available.
Product type	:	Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use	:	Industrial applications.
Use of the substance/ mixture	:	Hardener.
Uses advised against	:	Not applicable.

Manufacturer	:	PPG Aerospace PRC-DeSoto 12780 San Fernando Road Sylmar, CA 91342 Phone: 818 362 6711
Emergency telephone number	:	(412) 434-4515 (U.S.) (514) 645-1320 (Canada) 01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	:	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (nose/sinuses) - Category 2 Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 9.9% (Oral), 44.1% (Dermal), 10% (Inhalation)

GHS label elements

Section 2. Hazards identification

Hazard pictograms :

Signal word : Danger

Hazard statements : Highly flammable liquid and vapor.
Fatal if inhaled.
Causes serious eye irritation.
Causes skin irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing cancer.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure. (nose/sinuses)

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. If experiencing respiratory symptoms: Call a POISON CENTER or physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. Photosensitive agents : In case of accidental eye contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of the eyes. In case of accidental skin contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of skin.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Moisture-sensitive material. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed

Section 2. Hazards identification

to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Product name : 910-702 ACTIVATOR COMPONENT

Ingredient name	%	CAS number
Isocyanic acid, polymethylenepolyphenylene ester	≥20 - ≤49	9016-87-9
4,4'-methylenediphenyl diisocyanate	≥20 - ≤38	101-68-8
butanone	≥10 - <20	78-93-3
o-(p-isocyanatobenzyl)phenyl isocyanate	≥1.0 - ≤5.0	5873-54-1
methylenediphenyl diisocyanate	≥1.0 - ≤4.0	26447-40-5
2,4-dioxo-1,3-diazetidine-1,3-diylbis[p-phenylenemethylene-p-phenylene] diisocyanate	≤2.0	17589-24-1
2,2'-methylenediphenyl diisocyanate	<1.0	2536-05-2
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl)	<1.0	57636-09-6

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
In case of accidental eye contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of the eyes.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
In case of accidental skin contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of skin.

Section 4. First aid measures

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Fatal if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
Cyanate and isocyanate.
hydrogen cyanide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Special provisions : Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13). Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Precautions should be taken to minimize exposure to atmospheric humidity or water. CO_2 will be formed, which, in closed containers, could result in pressurization.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Isocyanic acid, polymethylenepolyphenylene ester	None.
4,4'-methylenediphenyl diisocyanate	**ACGIH TLV (United States, 3/2017).** TWA: 0.005 ppm 8 hours. **OSHA PEL (United States, 6/2016).** CEIL: 0.2 mg/m³ CEIL: 0.02 ppm **ACGIH TLV (United States, 1/2007).** TWA: 0.05 mg/m³ 8 hours.
butanone	**ACGIH TLV (United States, 3/2017).** STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours. **OSHA PEL (United States, 6/2016).** TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours.
o-(p-isocyanatobenzyl)phenyl isocyanate	None.
methylenediphenyl diisocyanate	None.
2,4-dioxo-1,3-diazetidine-1,3-diylbis[p-phenylenemethylene-p-phenylene] diisocyanate	None.
2,2'-methylenediphenyl diisocyanate	None.
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl)	None.

Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

Consult local authorities for acceptable exposure limits.

Section 8. Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber polyethylene

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : By spraying: air-fed respirator. By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Restrictions on use : Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

Section 9. Physical and chemical properties

Appearance

Physical state	:	Liquid.
Color	:	Clear.
Odor	:	Not available.
Odor threshold	:	Not available.
pH	:	Not available.
Melting point	:	Not available.
Boiling point	:	79.44°C (175°F)
Flash point	:	Closed cup: -5.56°C (22°F)
Material supports combustion.	:	Yes.
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
Flammability (solid, gas)	:	Not available.
Lower and upper explosive (flammable) limits	:	Not available.
Evaporation rate	:	Not available.
Vapor pressure	:	Not available.
Vapor density	:	Not available.
Relative density	:	1.18
Density (lbs / gal)	:	9.85
Solubility	:	Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	:	Not available.
Viscosity	:	Kinematic (40°C (104°F)): >0.21 cm^2/s (>21 cSt)
VOC	:	118 g/l
% Solid. (w/w)	:	90

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	In a fire, hazardous decomposition products may be produced. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	:	Keep away from: oxidizing agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.

Section 10. Stability and reactivity

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Isocyanic acid, polymethylenepolyphenylene ester	LC50 Inhalation Dusts and mists	Rat	490 mg/m³	4 hours
	LD50 Dermal	Rabbit	>9400 mg/kg	-
	LD50 Oral	Rat	49 g/kg	-
4,4'-methylenediphenyl diisocyanate	LC50 Inhalation Dusts and mists	Rat - Female	380 mg/m³	4 hours
	LD50 Oral	Rat	9200 mg/kg	-
butanone	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
Isocyanic acid, polymethylenepolyphenylene ester	-	3	-
4,4'-methylenediphenyl diisocyanate	-	3	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Section 11. Toxicological information

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category
Isocyanic acid, polymethylenepolyphenylene ester	Category 3
4,4'-methylenediphenyl diisocyanate	Category 3
butanone	Category 3
o-(p-isocyanatobenzyl)phenyl isocyanate	Category 3
methylenediphenyl diisocyanate	Category 3
2,4-dioxo-1,3-diazetidine-1,3-diylbis[p-phenylenemethylene-p-phenylene] diisocyanate	Category 3
2,2'-methylenediphenyl diisocyanate	Category 3
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly (oxy-1,2-ethanediyl)	Category 3

Specific target organ toxicity (repeated exposure)

Name	Category
Isocyanic acid, polymethylenepolyphenylene ester	Category 2
4,4'-methylenediphenyl diisocyanate	Category 2
o-(p-isocyanatobenzyl)phenyl isocyanate	Category 2
methylenediphenyl diisocyanate	Category 2
2,4-dioxo-1,3-diazetidine-1,3-diylbis[p-phenylenemethylene-p-phenylene] diisocyanate	Category 2
2,2'-methylenediphenyl diisocyanate	Category 2
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly (oxy-1,2-ethanediyl)	Category 2

Target organs : Contains material which causes damage to the following organs: lungs, brain, upper respiratory tract, eyes, nose/sinuses, throat.
Contains material which may cause damage to the following organs: kidneys, the nervous system, peripheral nervous system, skin, central nervous system (CNS).

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Fatal if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 11. Toxicological information

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Repeated exposure may lead to permanent respiratory disability. Acrylate components of the mixture have irritating properties. Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms, such as redness, blistering, dermatitis etc. May cause allergic skin reactions with repeated exposure. The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract. Ingestion may cause nausea, weakness and central nervous system effects. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Section 11. Toxicological information

Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	27287.7 mg/kg
Inhalation (gases)	7502.1 ppm
Inhalation (vapors)	11.23 mg/l
Inhalation (dusts and mists)	0.4824 mg/l

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
butanone	0.29	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 13. Disposal considerations

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	II	II	II
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.
Product RQ (lbs)	14625.9	Not applicable.	Not applicable.
RQ substances	(4,4'-methylenediphenyl diisocyanate, butanone)	Not applicable.	Not applicable.

Additional information

DOT : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are listed or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Section 15. Regulatory information

Classification : FLAMMABLE LIQUIDS - Category 2
ACUTE TOXICITY (inhalation) - Category 2
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (nose/sinuses) - Category 2
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
Isocyanic acid, polymethylenepolyphenylene ester	≥20 - ≤49	ACUTE TOXICITY (inhalation) - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1A SKIN SENSITIZATION - Category 1A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (inhalation) - Category 2
4,4'-methylenediphenyl diisocyanate	≥20 - ≤38	ACUTE TOXICITY (inhalation) - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1A SKIN SENSITIZATION - Category 1A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
butanone	≥10 - <20	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
o-(p-isocyanatobenzyl)phenyl isocyanate	≥1.0 - ≤5.0	ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1A SKIN SENSITIZATION - Category 1A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Section 15. Regulatory information

methylenediphenyl diisocyanate	≥1.0 - ≤4.0	ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1A SKIN SENSITIZATION - Category 1A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
2,4-dioxo-1,3-diazetidine-1,3-diylbis[p-phenylenemethylene-p-phenylene] diisocyanate	≤2.0	ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1A SKIN SENSITIZATION - Category 1B CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (nose/sinuses) (inhalation) - Category 2
2,2'-methylenediphenyl diisocyanate	<1.0	ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1A SKIN SENSITIZATION - Category 1A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl)	<1.0	COMBUSTIBLE DUSTS ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1A SKIN SENSITIZATION - Category 1B CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (nose/sinuses) (inhalation) - Category 2

SARA 313

		Chemical name	CAS number	Concentration
Supplier notification	:	Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	30 - 60
		4,4'-methylenediphenyl diisocyanate	101-68-8	15 - 40

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Section 15. Regulatory information

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 4 * **Flammability** : 3 **Physical hazards** : 1

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 4 **Flammability** : 3 **Instability** : 1

Date of previous issue : **9/20/2017**

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision **3 April 2019**
Version 12

Section 1. Identification

Product name	:	825X537 BASE COMPONENT
Product code	:	825X537 BASE COMPONENT
Other means of identification	:	Not available.
Product type	:	Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use	:	Industrial applications.
Use of the substance/ mixture	:	Coating.
Uses advised against	:	Not applicable.

Manufacturer	:	PPG Aerospace PRC-DeSoto 12780 San Fernando Road Sylmar, CA 91342 Phone: 818 362 6711
Emergency telephone number	:	(412) 434-4515 (U.S.) (514) 645-1320 (Canada) 01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	:	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 44.8% (Oral), 72.2% (Dermal), 62.2% (Inhalation)

GHS label elements

Section 2. Hazards identification

Hazard pictograms :

Signal word : Danger

Hazard statements : Highly flammable liquid and vapor.
Harmful if swallowed, in contact with skin or if inhaled.
Causes serious eye damage.
Causes skin irritation.
May cause cancer.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Sanding and grinding dusts may be harmful if inhaled. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. NTP, IARC and OSHA have classified chromium (+6) compounds as carcinogenic. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Product name : 825X537 BASE COMPONENT

Ingredient name	%	CAS number
Talc , not containing asbestiform fibres	≥20 - ≤50	14807-96-6
4-methylpentan-2-one	≥10 - ≤20	108-10-1
cyclohexanone	≥10 - ≤15	108-94-1
strontium chromate	≥5.0 - ≤10	7789-06-2
butanone	≥5.0 - ≤10	78-93-3
xylene	≥1.0 - ≤5.0	1330-20-7
2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane	<1.0	3388-04-3
ethylbenzene	<1.0	100-41-4
barium chromate	<1.0	10294-40-3
carbon black, respirable powder	≤1.0	1333-86-4

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Skin contact : Harmful in contact with skin. Causes skin irritation. Defatting to the skin.

Ingestion : Harmful if swallowed.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
halogenated compounds
metal oxide/oxides

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use

Section 7. Handling and storage

explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : Ingestion of product or cured coating may be harmful. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 35°C (95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Talc , not containing asbestiform fibres	**ACGIH TLV (United States, 3/2018).** TWA: 2 mg/m³ 8 hours. Form: Respirable **OSHA PEL Z3 (United States).** TWA: 2 mg/m³
4-methylpentan-2-one	**ACGIH TLV (United States, 3/2018).** STEL: 75 ppm 15 minutes. TWA: 20 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 410 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
cyclohexanone	**ACGIH TLV (United States, 3/2018).** **Absorbed through skin.** STEL: 50 ppm 15 minutes. TWA: 20 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 200 mg/m³ 8 hours. TWA: 50 ppm 8 hours.
strontium chromate	**ACGIH TLV (United States, 3/2018).** TWA: 0.0005 mg/m³, (measured as Cr) 8 hours. **OSHA PEL Z2 (United States, 2/2013).** CEIL: 1 mg/10m³

Section 8. Exposure controls/personal protection

butanone	**OSHA PEL (United States, 5/2018).** TWA: 0.005 mg/m³, (as Cr) 8 hours. **ACGIH TLV (United States, 3/2018).** STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours.
xylene	**ACGIH TLV (United States, 3/2018).** STEL: 651 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m³ 8 hours. TWA: 100 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane	None.
ethylbenzene	**ACGIH TLV (United States, 3/2018).** TWA: 20 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
barium chromate	**ACGIH TLV (United States, 3/2018).** TWA: 0.0002 mg/m³, (measured as Cr) 8 hours. Form: Inhalable fraction STEL: 0.0005 mg/m³, (measured as Cr) 15 minutes. Form: Inhalable fraction **OSHA PEL (United States, 5/2018).** TWA: 0.005 mg/m³, (as Cr) 8 hours. **OSHA PEL Z2 (United States, 2/2013).** CEIL: 1 mg/10m³ **OSHA PEL (United States).** TWA: 5 mg/m³
carbon black, respirable powder	**ACGIH TLV (United States, 3/2018).** TWA: 3 mg/m³ 8 hours. Form: Inhalable fraction **OSHA PEL (United States, 5/2018).** TWA: 3.5 mg/m³ 8 hours.

Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

Consult local authorities for acceptable exposure limits.

Section 8. Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles and face shield.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : For prolonged or repeated handling, use the following type of gloves:

Recommended: butyl rubber, polyvinyl alcohol (PVA), Viton®
Not recommended: nitrile rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Green.
Odor	: Not available.
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: 79.44 to 155.56°C (175 to 312°F)
Flash point	: Closed cup: -5.56°C (22°F)
Material supports combustion.	: Yes.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Evaporation rate	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 1.22
Density (lbs / gal)	: 10.18
Solubility	: Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	: Not available.
Viscosity	: Kinematic (40°C (104°F)): >0.21 cm^2/s (>21 cSt)
VOC	: 509 g/l

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Section 10. Stability and reactivity

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
4-methylpentan-2-one	LC50 Inhalation Vapor	Rat	12.3 mg/l	4 hours
	LD50 Oral	Rat	2.08 g/kg	-
cyclohexanone	LC50 Inhalation Gas.	Rat	8000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	11 mg/l	4 hours
	LD50 Dermal	Rabbit	1100 mg/kg	-
	LD50 Oral	Rat	1.54 g/kg	-
strontium chromate	LD50 Oral	Rat	3118 mg/kg	-
butanone	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-
xylene	LD50 Dermal	Rabbit	>1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
2-(3,4-epoxycyclohexyl) ethyltrimethoxysilane	LD50 Dermal	Rabbit	6.7 g/kg	-
	LD50 Oral	Rat	13 g/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
carbon black, respirable powder	LD50 Dermal	Rabbit	>3 g/kg	-
	LD50 Oral	Rat	>15400 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Section 11. Toxicological information

Product/ingredient name	OSHA	IARC	NTP
4-methylpentan-2-one	-	2B	-
cyclohexanone	-	3	-
strontium chromate	+	1	Known to be a human carcinogen.
xylene	-	3	-
ethylbenzene	-	2B	-
barium chromate	+	1	Known to be a human carcinogen.
carbon black, respirable powder	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category
Talc , not containing asbestiform fibres	Category 3
4-methylpentan-2-one	Category 3
butanone	Category 3
xylene	Category 3

Specific target organ toxicity (repeated exposure)

Name	Category
strontium chromate	Category 2
ethylbenzene	Category 2
barium chromate	Category 2

Target organs : Contains material which causes damage to the following organs: blood, brain. Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, liver, peripheral nervous system, cardiovascular system, upper respiratory tract, skin, bones, central nervous system (CNS), eye, lens or cornea.

Aspiration hazard

Name	Result
xylene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye damage.
Inhalation : Harmful if inhaled. May cause respiratory irritation.
Skin contact : Harmful in contact with skin. Causes skin irritation. Defatting to the skin.
Ingestion : Harmful if swallowed.

Section 11. Toxicological information

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Route	ATE value
Oral	1396.4 mg/kg
Dermal	1896.3 mg/kg
Inhalation (gases)	25357.8 ppm
Inhalation (vapors)	13.04 mg/l
Inhalation (dusts and mists)	2.598 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
ethylbenzene	Acute LC50 150 to 200 mg/l Fresh water	Fish - Lepomis macrochirus - Young of the year	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily
ethylbenzene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
4-methylpentan-2-one	1.31	-	low
cyclohexanone	0.81	-	low
butanone	0.29	-	low
xylene	3.16	7.4 to 18.5	low
ethylbenzene	3.15	79.43	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere

Section 13. Disposal considerations

inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	II	II	II
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	(strontium chromate)	Not applicable.
Product RQ (lbs)	102.29	Not applicable.	Not applicable.
RQ substances	(strontium chromate, xylene)	Not applicable.	Not applicable.

Additional information

DOT : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are listed or exempted.

United States - TSCA 12(b) - Chemical export notification:
strontium chromate Annual notification

SARA 302/304

SARA 304 RQ : Not applicable.

Section 15. Regulatory information

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 2
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (dermal) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
Talc , not containing asbestiform fibres	≥20 - ≤50	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
4-methylpentan-2-one	≥10 - ≤20	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Defatting irritant
cyclohexanone	≥10 - ≤15	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1
strontium chromate	≥5.0 - ≤10	ACUTE TOXICITY (oral) - Category 4 CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
butanone	≥5.0 - ≤10	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
xylene	≥1.0 - ≤5.0	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1
2-(3,4-epoxycyclohexyl) ethyltrimethoxysilane	<1.0	SKIN SENSITIZATION - Category 1B CARCINOGENICITY - Category 2

Section 15. Regulatory information

		HNOC - Defatting irritant
ethylbenzene	<1.0	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
barium chromate	<1.0	OXIDIZING SOLIDS - Category 1 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 HNOC - Avoid contact with organic materials.
carbon black, respirable powder	≤1.0	COMBUSTIBLE DUSTS CARCINOGENICITY - Category 2

SARA 313

Supplier notification :

Chemical name	CAS number	Concentration
4-methylpentan-2-one	108-10-1	10 - 30
strontium chromate	7789-06-2	5 - 10
xylene	1330-20-7	1 - 5
ethylbenzene	100-41-4	0.1 - 1
barium chromate	10294-40-3	0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

⚠ **WARNING**: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 3 * **Flammability** : 3 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 3 **Flammability** : 3 **Instability** : 0

Date of previous issue : **3/7/2019**

Organization that prepared the MSDS : EHS

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision	**17 June 2019**	CRP1987 CMT11961 PRC010X311
Version 5		

Section 1. Identification

Product name	: 010X311 SOLVENT REDUCER
Product code	: 010X311 SOLVENT REDUCER
Other means of identification	: Not available.
Product type	: Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use	: Industrial applications.
Use of the substance/ mixture	: Thinner.
Uses advised against	: Not applicable.

Manufacturer	: PPG Aerospace PRC-DeSoto 12780 San Fernando Road Sylmar, CA 91342 Phone: 818 362 6711
Emergency telephone number	: (412) 434-4515 (U.S.) (514) 645-1320 (Canada) 01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 99.1% (Dermal)

GHS label elements

Hazard pictograms :

Signal word : Danger

Section 2. Hazards identification

Hazard statements : Highly flammable liquid and vapor.
Harmful if inhaled.
Causes serious eye irritation.
Suspected of causing cancer.
May cause respiratory irritation.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.

Response : IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Product name : 010X311 SOLVENT REDUCER

Ingredient name	%	CAS number
4-methylpentan-2-one	≥90	108-10-1

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Skin contact : Defatting to the skin. May cause skin dryness and irritation.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
irritation
dryness
cracking

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact

Section 6. Accidental release measures

information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
4-methylpentan-2-one	**ACGIH TLV (United States, 3/2018).** STEL: 75 ppm 15 minutes. TWA: 20 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 410 mg/m³ 8 hours. TWA: 100 ppm 8 hours.

Key to abbreviations

A = Acceptable Maximum Peak

S = Potential skin absorption

Section 8. Exposure controls/personal protection

ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.
Color : Clear.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : 117.22°C (243°F)

Flash point : Closed cup: 15.56°C (60°F)

Material supports combustion. : Yes.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Upper: 8%

Evaporation rate : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 0.8

Density (lbs / gal) : 6.68

Solubility : Insoluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not available.

Viscosity : Kinematic (40°C (104°F)): >0.21 cm^2/s (>21 cSt)

VOC : 799 g/l

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products.

Section 10. Stability and reactivity

Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
4-methylpentan-2-one	LC50 Inhalation Vapor LD50 Oral	Rat Rat	12.3 mg/l 2.08 g/kg	4 hours -

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
4-methylpentan-2-one	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category
4-methylpentan-2-one	Category 3

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which causes damage to the following organs: brain.
Contains material which may cause damage to the following organs: kidneys, liver, upper respiratory tract, skin, eyes, central nervous system (CNS).

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : Harmful if inhaled. May cause respiratory irritation.
Skin contact : Defatting to the skin. May cause skin dryness and irritation.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
irritation
dryness
cracking

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Section 11. Toxicological information

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	2099 mg/kg
Inhalation (vapors)	12.41 mg/l
Inhalation (dusts and mists)	1.51 mg/l

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
4-methylpentan-2-one	1.31	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN1245	UN1245	UN1245
UN proper shipping name	METHYL ISOBUTYL KETONE	METHYL ISOBUTYL KETONE	METHYL ISOBUTYL KETONE
Transport hazard class (es)	3	3	3
Packing group	II	II	II
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.
Product RQ (lbs)	5045.7	Not applicable.	Not applicable.
RQ substances	(4-methylpentan-2-one)	Not applicable.	Not applicable.

Additional information

DOT : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are listed or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 2
ACUTE TOXICITY (inhalation) - Category 4
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
4-methylpentan-2-one	≥90	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Defatting irritant

SARA 313

	Chemical name	CAS number	Concentration
Supplier notification :	4-methylpentan-2-one	108-10-1	60 - 100

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

⚠ **WARNING**: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 3 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability** : 3 **Instability** : 0

Section 16. Other information

Date of previous issue : **5/4/2018**

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

CRP5156
CMT00938
GESS4155

SAFETY DATA SHEET

1. Identification

Product identifier: SS4155

Other means of identification
Synonyms: SILICON PRIMER MIXTURE

Recommended use and restriction on use
Recommended use: Primer
Restrictions on use: Not known.

Manufacturer/Importer/Distributor Information	:	Momentive Performance Materials LLC 260 Hudson River Road Waterford NY 12188
Contact person	:	commercial.services@momentive.com
Telephone	:	General information +1-800-295-2392
Emergency telephone number		
Supplier	:	CHEMTREC 1-800-424-9300

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids	Category 3

Health Hazards

Serious Eye Damage/Eye Irritation	Category 1
Specific Target Organ Toxicity - Single Exposure	Category 3[1]
Specific Target Organ Toxicity - Repeated Exposure	Category 1[2]

Target Organs
1. Respiratory tract irritation.
2. Central nervous system.

Unknown toxicity - Health

Acute toxicity, oral	0 %
Acute toxicity, dermal	0 %

Acute toxicity, inhalation, vapor	0 %
Acute toxicity, inhalation, dust or mist	0 %

Label Elements

Hazard Symbol:

Signal Word: Danger

Hazard Statement: H226; Flammable liquid and vapor.
H318; Causes serious eye damage.
H335; May cause respiratory irritation.
H372; Causes damage to organs <or state all organs affected, if known> through prolonged or repeated exposure <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting/...] equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Immediately call a POISON CENTER/doctor. In case of fire: Use alcohol resistant foam for extinction.

Storage: Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*	Notes
STODDARD SOLVENT	8052-41-3	50 - <100%	# This substance has workplace exposure limit(s).
Tetraethyl Silicate	78-10-4	20 - <50%	# This substance has workplace exposure limit(s).
1-butanol, titanium(4+)salt	5593-70-4	5 - <10%	No data available.
1,2,4-TRIMETHYLBENZENE	95-63-6	1 - <5%	# This substance has workplace exposure limit(s).
Silicic acid, ethyl ester	11099-06-2	1 - <5%	# This substance has workplace exposure limit(s).

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion: Drink plenty of water.

Inhalation: Move the exposed person to fresh air at once. Remove from contaminated area. Apply artificial respiration if not breathing. Call a physician or poison control center immediately. For breathing difficulties, oxygen may be necessary.

Skin Contact: Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Get medical attention if symptoms persist. Wash contaminated clothing before reuse.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: Treatment is symptomatic and supportive.

5. Fire-fighting measures

General Fire Hazards: Do not use water jet as an extinguisher, as this will spread the fire. Use water spray to keep fire-exposed containers cool.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: All standard extinguishing agents are suitable.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Ground container and transfer equipment to eliminate static electric sparks.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Product may charge electrostatically during pouring or filling. All equipment used when handling the product must be grounded.

Special protective equipment for fire-fighters: Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Avoid contact with eyes, skin, and clothing. Keep out of reach of children. Attention: Not for injection into humans.

Methods and material for containment and cleaning up: Warn other workers of spill. Wear proper protective equipment as specified in the protective equipment section. Wipe, scrape, or soak up in an inert material and put in a container intended for flammable materials for disposal.

Notification Procedures: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Environmental Precautions: Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling: Sensitivity to static discharge is expected; material has a flash point below 200 F. Do not breathe vapor/spray. Do not taste or swallow. Avoid contact with eyes, skin, and clothing. See Section 8 of the SDS for Personal Protective Equipment. Wash hands after handling. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures.

Conditions for safe storage, including any incompatibilities: Keep away from heat, sparks and open flame. Keep container closed. Store in original container.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values		Source
STODDARD SOLVENT	TWA	100 ppm		US. ACGIH Threshold Limit Values (03 2015)
	REL		350 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	Ceil_Time		1,800 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	500 ppm	2,900 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	100 ppm	525 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Tetraethyl Silicate	TWA	10 ppm		US. ACGIH Threshold Limit Values (03 2015)
	REL	10 ppm	85 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	100 ppm	850 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	10 ppm	85 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	10 ppm	85 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL		850 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (03 2014)
	AN ESL		85 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (03 2014)
	ST ESL		100 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (03 2014)
	AN ESL		10 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (03 2014)
	TWA PEL	10 ppm	85 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (01 2015)
1,2,4-TRIMETHYLBENZENE	TWA	25 ppm		US. ACGIH Threshold Limit Values (03 2015)
	REL	25 ppm	125 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA	25 ppm	125 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

Appropriate Engineering Controls Provide eyewash station and safety shower. General (mechanical) room ventilation is expected to be satisfactory if handled at low temperatures or in covered equipment. Provide adequate ventilation if fumes or vapors are generated.

Individual protection measures, such as personal protective equipment

General information: General (mechanical) room ventilation is expected to be satisfactory if handled at low temperatures or in covered equipment.

Eye/face protection: Monogoggles Use safety goggles and face shield in case of splash risk.

Skin Protection

Hand Protection: Chemical resistant gloves

Other: Wear suitable protective clothing and eye/face protection.

Respiratory Protection: If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134).

Hygiene measures: Avoid inhalation of vapors and spray mists. Avoid contact with eyes, skin, and clothing. When using do not eat, drink or smoke. Wash thoroughly after handling.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Blue
Odor:	Faint
Odor threshold:	No data available.
pH:	Not applicable
Melting point/freezing point:	< -34 °C
Initial boiling point and boiling range:	> 98 °C (1,013 hPa)
Flash Point:	36.60 °C (Closed Cup)
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	6.00 %(V)
Flammability limit - lower (%):	1.00 %(V)
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.

Heat of combustion:	No data available.
Vapor pressure:	Not applicable
Vapor density:	No data available.
Density:	calculated 0.86 g/cm3
Relative density:	0.81
Solubility(ies)	
Solubility in water:	Negligible
Solubility (other):	No data available.
Partition coefficient (n-octanol/water) Log Pow:	No data available.
Auto-ignition temperature:	245.00 °C
Decomposition temperature:	No data available.
SADT:	No data available.
Viscosity, dynamic:	No data available.
Viscosity, kinematic:	No data available.
VOC:	765 g/l ;

10. Stability and reactivity

Reactivity:	No dangerous reaction if used as recommended.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerisation does not occur.
Conditions to avoid:	Keep away from sources of ignition - No smoking. Keep away from sources of ignition - No smoking.
Incompatible Materials:	Oxidizing agents.
Hazardous Decomposition Products:	Carbon dioxide Silicon dioxide. Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	No data available.
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion: No data available.

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product:
ATEmix : 24,693.8 mg/kg

Dermal
Product: Not classified for acute toxicity based on available data.

Inhalation
Product:
ATEmix : 41.83 mg/l
ATEmix : 5.7 mg/l

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: No data available.

Serious Eye Damage/Eye Irritation
Product: No data available.

Respiratory or Skin Sensitization
Product: No data available.

Carcinogenicity
Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity
Product: No data available.

Specific Target Organ Toxicity - Single Exposure
Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure
Product: No data available.

Target Organs
Specific Target Organ Toxicity - Single Exposure: Respiratory tract irritation.
Specific Target Organ Toxicity - Repeated Exposure: Central nervous system.

Aspiration Hazard
Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Specified substance(s):

Tetraethyl Silicate	LC100 (No data available., 24 h): 9,000 mg/l LC50 (Brachydanio rerio, 96 h): > 245 mg/l

Aquatic Invertebrates

Product:	No data available.
Specified substance(s):	
Tetraethyl Silicate	EC50 (Blue Crab): 7,800 mg/l

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.

Aquatic Invertebrates

Product:	No data available.

Toxicity to Aquatic Plants

Product:	No data available.

Persistence and Degradability

Biodegradation

Product:	No data available.
Specified substance(s):	
Tetraethyl Silicate	98 % (28 d, OECD-Guideline 301 A (DOC Die-Away Test)) Readily biodegradable

BOD/COD Ratio

Product:	No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	No data available.

Partition Coefficient n-octanol / water (log Kow)

Product:	No data available.

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

STODDARD SOLVENT	No data available.
Tetraethyl Silicate	No data available.
1-butanol, titanium(4+)salt	No data available.
1,2,4-TRIMETHYLBENZENE	No data available.
Silicic acid, ethyl ester	No data available.

Other adverse effects: No data available.

13. Disposal considerations

General information: The generation of waste should be avoided or minimized wherever possible. Do not discharge into drains, water courses or onto the ground. See Section 8 for information on appropriate personal protective equipment.

Disposal instructions: Disposal should be made in accordance with federal, state and local regulations.

Contaminated Packaging: Dispose of as unused product.

14. Transport information

DOT

UN Number:	UN 1993
UN Proper Shipping Name:	Flammable liquids, n.o.s.(SOLVENT NAPHTHA, TETRAETHYL SILICATE)
Transport Hazard Class(es)	
Class:	3
Label(s):	3
Packing Group:	III
Marine Pollutant:	No

IMDG

UN Number:	UN 1993
UN Proper Shipping Name:	FLAMMABLE LIQUID, N.O.S.(SOLVENT NAPHTHA, TETRAETHYL SILICATE)
Transport Hazard Class(es)	
Class:	3
Label(s):	3
EmS No.:	F-E, S-E
Packing Group:	III
Marine Pollutant:	No
Limited quantity	5.00L
Excepted quantity	E1

IATA

UN Number:	UN 1993
Proper Shipping Name:	Flammable liquid, n.o.s.(SOLVENT NAPHTHA, TETRAETHYL SILICATE)

Transport Hazard Class(es):	
Class:	3
Label(s):	3
Packing Group:	III
Cargo aircraft only Packing Instructions:	366
Passenger and cargo aircraft Packing Instructions:	366
Limited quantity:	10.00L
Packing Instructions:	Y344
Excepted quantity	E1
Environmental Hazards:	Not regulated.
Marine Pollutant:	No

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Fire Hazard
Immediate (Acute) Health Hazards
Delayed (Chronic) Health Hazard

SARA 302 Extremely Hazardous Substance
None present or none present in regulated quantities.

SARA 304 Emergency Release Notification
None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
STODDARD SOLVENT	10000 lbs
Tetraethyl Silicate	10000 lbs
1-butanol, titanium(4+)salt	10000 lbs
1,2,4-TRIMETHYLBENZENE	10000 lbs
Silicic acid, ethyl ester	10000 lbs

SARA 313 (TRI Reporting)

Chemical Identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
1,2,4-TRIMETHYLBENZENE		

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
STODDARD SOLVENT
Tetraethyl Silicate
1-butanol, titanium(4+)salt
1,2,4-TRIMETHYLBENZENE
Silicic acid, ethyl ester

US. Massachusetts RTK - Substance List

Chemical Identity
STODDARD SOLVENT
Tetraethyl Silicate
1,2,4-TRIMETHYLBENZENE

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
STODDARD SOLVENT
Tetraethyl Silicate
1,2,4-TRIMETHYLBENZENE
Silicic acid, ethyl ester

US. Rhode Island RTK

Chemical Identity
STODDARD SOLVENT
Tetraethyl Silicate

Inventory Status:

Australia AICS:	y (positive listing)	Remarks: None.
EU EINECS List:	y (positive listing)	Remarks: None.
Japan (ENCS) List:	y (positive listing)	Remarks: None.
China Inventory of Existing Chemical Substances:	y (positive listing)	Remarks: None.
Korea Existing Chemicals Inv. (KECI):	y (positive listing)	Remarks: None.
Canada DSL Inventory List:	y (positive listing)	Remarks: None.
Canada NDSL Inventory:	n (Negative listing)	Remarks: None.
Philippines PICCS:	y (positive listing)	Remarks: None.
US TSCA Inventory:	y (positive listing)	Remarks: None.
Taiwan. Taiwan inventory (CSNN):	y (positive listing)	Remarks: None.

16.Other information, including date of preparation or last revision

HMIS Hazard ID

Health		4
		3
Physical Hazards		1
PERSONAL PROTECTION		

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

Issue Date: 04/09/2018

Revision Date: No data available.

Version #: 3.0

Further Information: No data available.

Disclaimer:

Notice to reader

Unless otherwise specified in section 1, Momentive products are intended for use in the manufacture and/or formulation of products and are not intended for direct consumer use. These products are not intended for long-lasting (> 30 days) implantation, injection or direct ingestion into the human body, nor for use in the manufacture of multiple use contraceptives.
Keep out of the reach of children.

Further Information

The information provided in this Safety Data Sheet is correct to the best ofour knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safehandling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET
THE DOW CHEMICAL COMPANY

Product name: DOWSIL™ 3145 RTV Adhesive/Sealant Gray

Issue Date: 04/29/2020
Print Date: 01/05/2021

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: DOWSIL™ 3145 RTV Adhesive/Sealant Gray

Recommended use of the chemical and restrictions on use
Identified uses: Adhesive, binding agents Electrical industry and electronics

COMPANY IDENTIFICATION
THE DOW CHEMICAL COMPANY
2211 H.H. DOW WAY
MIDLAND MI 48674
UNITED STATES

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: CHEMTREC +1 800-424-9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with 29 CFR 1910.1200
Reproductive toxicity - Category 2

Label elements
Hazard pictograms

Signal word: **WARNING!**

Hazards
Suspected of damaging fertility or the unborn child.

Precautionary statements

Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response
IF exposed or concerned: Get medical advice/ attention.

Storage
Store locked up.

Disposal
Dispose of contents/ container to an approved waste disposal plant.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Silicone elastomer
This product is a mixture.

Component	CASRN	Concentration
Methyltrimethoxysilane	1185-55-3	>= 5.8 - <= 7.6 %
Octamethyl Cyclotetrasiloxane	556-67-2	>= 0.14 - <= 0.25 %
Methanol	67-56-1	>= 0.1 - <= 0.18 %

4. FIRST AID MEASURES

Description of first aid measures
General advice:
If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air and keep comfortable for breathing; consult a physician.

Skin contact: Wash off with plenty of water. Suitable emergency safety shower facility should be available in work area.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: Rinse mouth with water. No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Water spray. Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.

Unsuitable extinguishing media: None known..

Special hazards arising from the substance or mixture

Hazardous combustion products: Carbon oxides. Silicon oxides.

Unusual Fire and Explosion Hazards: Exposure to combustion products may be a hazard to health..

Advice for firefighters

Fire Fighting Procedures: Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage..
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.. Use personal protective equipment..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Do not release the product to the aquatic environment above defined regulatory levels Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Wipe up or scrape up and contain for salvage or disposal. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine

which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get on skin or clothing. Avoid contact with eyes. Do not swallow. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.
Use only with adequate ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Conditions for safe storage: Keep in properly labelled containers. Store locked up. Store in accordance with the particular national regulations.

Do not store with the following product types: Strong oxidizing agents.
Unsuitable materials for containers: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Methyltrimethoxysilane	Dow IHG	TWA	7.5 ppm
	Further information: Skin Sensitizer		
Octamethyl Cyclotetrasiloxane	US WEEL	TWA	10 ppm
Methanol	ACGIH	TWA	200 ppm
	Further information: Skin: Danger of cutaneous absorption		
	ACGIH	STEL	250 ppm
	Further information: Skin: Danger of cutaneous absorption		
	OSHA Z-1	TWA	260 mg/m3 200 ppm

The following substance(s), which have Occupational Exposure Limit(s) (OEL), may be formed during handling or processing:, Methanol.

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Methanol	67-56-1	Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

Exposure controls
Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: Natural rubber ("latex"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	paste
Color	grey
Odor	slight
Odor Threshold	No data available
pH	Not applicable
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	Not applicable
Flash point	Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	Not classified as a flammability hazard
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.12

Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Dynamic Viscosity	Not applicable
Kinematic Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Liquid Density	1.12 g/cm3
Molecular weight	No data available
Particle size	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Can react with strong oxidizing agents. When heated to temperatures above 180 °C (356 °F) in the presence of air, trace quantities of formaldehyde may be released. Adequate ventilation is required.

Conditions to avoid: None known.

Incompatible materials: Oxidizing agents

Hazardous decomposition products:
Decomposition products can include and are not limited to: Formaldehyde. Methanol.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Information on likely routes of exposure
Eye contact, Skin contact, Ingestion.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity
As product: Single dose oral LD50 has not been determined.

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

Based on information for component(s):

LD50, > 5,000 mg/kg Estimated.

Information for components:

Methyltrimethoxysilane
LD50, Rat, male and female, 11,685 mg/kg

Octamethyl Cyclotetrasiloxane
LD50, Rat, male, > 4,800 mg/kg No deaths occurred at this concentration.

Methanol
Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart. Effects may be delayed. LD50, Rat, > 5,000 mg/kg

Lethal Dose, Humans, 340 mg/kg Estimated.

Lethal Dose, Humans, 29 - 237 ml Estimated.

Acute dermal toxicity
For similar material(s):
LD50, Rat, > 2,000 mg/kg
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Information for components:

Methyltrimethoxysilane
LD50, Rabbit, male and female, > 9,500 mg/kg

Octamethyl Cyclotetrasiloxane
LD50, Rat, male and female, > 2,400 mg/kg No deaths occurred at this concentration.

Methanol
Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death. LD50, Rabbit, 15,800 mg/kg

Acute inhalation toxicity
Brief exposure (minutes) is not likely to cause adverse effects. Vapor from heated material may cause respiratory irritation.

As product: The LC50 has not been determined.

Information for components:

Methyltrimethoxysilane
LC50, Rat, male and female, 4 Hour, vapour, 51.6 mg/l

Octamethyl Cyclotetrasiloxane
LC50, Rat, male and female, 4 Hour, dust/mist, 36 mg/l OECD Test Guideline 403

Methanol
Easily attainable vapor concentrations may cause serious adverse effects, even death. At lower concentrations: May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death. Effects may be delayed.

LC50, Rat, 4 Hour, vapour, 3 mg/l

Skin corrosion/irritation
For similar material(s):
Brief contact may cause slight skin irritation with local redness.

Information for components:

Methyltrimethoxysilane
Brief contact is essentially nonirritating to skin.

Octamethyl Cyclotetrasiloxane
Brief contact is essentially nonirritating to skin.

Methanol
Prolonged contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation
For similar material(s):
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Information for components:

Methyltrimethoxysilane
Essentially nonirritating to eyes.
Corneal injury is unlikely.

Octamethyl Cyclotetrasiloxane
Essentially nonirritating to eyes.

Methanol
May cause eye irritation.

Sensitization
Based on data from similar materials
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Information for components:

Methyltrimethoxysilane
Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Octamethyl Cyclotetrasiloxane
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Methanol
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Information for components:

Methyltrimethoxysilane
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Octamethyl Cyclotetrasiloxane
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Methanol
Causes damage to organs.
Route of Exposure: Oral
Target Organs: Eyes, Central nervous system

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

Information for components:

Methyltrimethoxysilane
Based on physical properties, not likely to be an aspiration hazard.

Octamethyl Cyclotetrasiloxane
May be harmful if swallowed and enters airways.

Methanol
May be harmful if swallowed and enters airways.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Contains a component(s) that is/are not expected to be bioavailable due to the physical state of the material under normal handling and processing conditions.

Information for components:

Methyltrimethoxysilane
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Octamethyl Cyclotetrasiloxane
In animals, effects have been reported on the following organs:
Kidney.
Liver.
Respiratory tract.
Female reproductive organs.

Methanol
Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

Carcinogenicity
Contains a component(s) that is/are not expected to be bioavailable due to the physical state of the material under normal handling and processing conditions.

Information for components:

Methyltrimethoxysilane
No relevant data found.

Octamethyl Cyclotetrasiloxane
Results from a 2 year repeated vapour inhalation exposure study to rats of octamethylcyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus of female animals. This finding occurred at the highest exposure dose (700 ppm) only. Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans. Repeated exposure in rats to D4 resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

Methanol
Did not cause cancer in laboratory animals.

Teratogenicity
Contains component(s) which did not cause birth defects or any other fetal effects in lab animals.

Information for components:

Methyltrimethoxysilane
No relevant data found.

Octamethyl Cyclotetrasiloxane
Did not cause birth defects or any other fetal effects in laboratory animals.

Methanol
Methanol has caused birth defects in mice at doses nontoxic to the mother as well as slight behavioral effects in offspring of rats.

Reproductive toxicity

In animal studies on component(s), effects on reproduction were seen only at doses that produced significant toxicity to the parent animals. Contains component(s) which have interfered with fertility in animal studies.

Information for components:

Methyltrimethoxysilane
No relevant data found.

Octamethyl Cyclotetrasiloxane
In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. In animal studies, has been shown to interfere with fertility.

Methanol
In animal studies, did not interfere with reproduction.

Mutagenicity
For similar material(s): In vitro genetic toxicity studies were negative.

Information for components:

Methyltrimethoxysilane
No relevant data found.

Octamethyl Cyclotetrasiloxane
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Methanol
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative in some cases and positive in other cases.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Methyltrimethoxysilane

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 110 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 122 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 120 mg/l, OECD Test Guideline 201

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 120 mg/l, OECD Test Guideline 201

Octamethyl Cyclotetrasiloxane

Acute toxicity to fish
Not expected to be acutely toxic to aquatic organisms.
No toxicity at the limit of solubility
LC50, Oncorhynchus mykiss (rainbow trout), flow-through, 96 Hour, > 0.022 mg/l
No toxicity at the limit of solubility
LC50, Cyprinodon variegatus (sheepshead minnow), flow-through, 14 d, > 0.0063 mg/l

Acute toxicity to aquatic invertebrates
No toxicity at the limit of solubility
EC50, Mysidopsis bahia (opossum shrimp), flow-through test, 96 Hour, > 0.0091 mg/l
No toxicity at the limit of solubility
EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 0.015 mg/l

Acute toxicity to algae/aquatic plants
No toxicity at the limit of solubility
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate, > 0.022 mg/l

Chronic toxicity to fish
No toxicity at the limit of solubility
NOEC, Oncorhynchus mykiss (rainbow trout), 93 d, >= 0.0044 mg/l

Chronic toxicity to aquatic invertebrates
No toxicity at the limit of solubility
NOEC, Daphnia magna (Water flea), 21 d, >= 0.0079 mg/l

Methanol

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Bluegill sunfish (Lepomis macrochirus), flow-through test, 96 Hour, 15,400 mg/l

Acute toxicity to aquatic invertebrates
LC50, Daphnia magna (Water flea), 48 Hour, > 10,000 mg/l

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, 22,000 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
IC50, activated sludge, 3 Hour, Respiration rates., > 1,000 mg/l, OECD Test Guideline 209

Chronic toxicity to fish
NOEC, Oryzias latipes (Orange-red killifish), 200 Hour, 15,800 mg/l

Persistence and degradability

Methyltrimethoxysilane

Biodegradability: No relevant data found.

Octamethyl Cyclotetrasiloxane

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Not applicable
Biodegradation: 3.7 %
Exposure time: 28 d
Method: OECD Test Guideline 310

Stability in Water (1/2-life)
Hydrolysis, DT50, 69.3 - 144 Hour, pH 7, Half-life Temperature 24.6 °C, OECD Test Guideline 111

Photodegradation
Atmospheric half-life: 16 d
Method: Estimated.

Methanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Theoretical Oxygen Demand: 1.50 mg/mg

Chemical Oxygen Demand: 1.49 mg/mg Dichromate

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	72 %
20 d	79 %

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Atmospheric half-life: 8 - 18 d
Method: Estimated.

Bioaccumulative potential

Methyltrimethoxysilane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -2.36

Octamethyl Cyclotetrasiloxane

Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
Partition coefficient: n-octanol/water(log Pow): 6.49 Measured
Bioconcentration factor (BCF): 12,400 Pimephales promelas (fathead minnow) Measured

Methanol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.77 Measured
Bioconcentration factor (BCF): < 10 Leuciscus idus (Golden orfe) Measured

Mobility in soil

Methyltrimethoxysilane
No relevant data found.

Octamethyl Cyclotetrasiloxane
Expected to be relatively immobile in soil (Koc > 5000).

Methanol
Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 0.44 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. For additional information, refer to: Handling & Storage Information, MSDS Section 7 Stability & Reactivity Information, MSDS Section10 Regulatory Information, MSDS Section 15

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.

14. TRANSPORT INFORMATION

DOT
Not regulated for transport

Classification for SEA transport (IMO-IMDG):
Not regulated for transport

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code
Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):
Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Reproductive toxicity

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Right To Know
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	CASRN
Polydimethylsiloxane hydroxy-terminated	70131-67-8
Hexamethyldisilazane reaction with Silica	68909-20-6
Methyltrimethoxysilane	1185-55-3
Titanium dioxide	13463-67-7

California Prop. 65
WARNING: This product can expose you to chemicals including Titanium dioxide, Carbon black, Silicon dioxide, which is/are known to the State of California to cause cancer, and Methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Flammability	Instability
1	1	0

HMIS

Health	Flammability	Physical Hazard
1*	1	0

* = Chronic Effects (See Hazards Identification)

Revision
Identification Number: 6024877 / A001 / Issue Date: 04/29/2020 / Version: 9.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL	Short-term exposure limit
TWA	Time weighted average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Full text of other abbreviations
AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
US

SAFETY DATA SHEET

1. Identification

Product identifier: XYLENES

Other means of identification

Product No.: X516, 8802, 8668, 8664, 9516, 9493, 9490, 5377, 9483

Recommended use and restriction on use

Recommended use: Not available.
Restrictions on use: Not known.

Details of the supplier of the safety data sheet

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax: 610-573-2610
Contact Person: Environmental Health & Safety
E-mail: info@avantormaterials.com

Emergency telephone number:
CHEMTREC: 1-800-424-9300 within US and Canada
CHEMTREC: 1-703-527-3887 outside US and Canada

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids	Category 3

Health Hazards

Acute toxicity (Dermal)	Category 4
Acute toxicity (Inhalation - vapor)	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2A
Carcinogenicity	Category 2
Specific Target Organ Toxicity - Single Exposure	Category 3
Specific Target Organ Toxicity - Repeated Exposure	Category 1
Aspiration Hazard	Category 1

Unknown toxicity - Health

Acute toxicity, oral	0.08 %
Acute toxicity, dermal	0.08 %
Acute toxicity, inhalation, vapor	100 %
Acute toxicity, inhalation, dust or mist	100 %

Environmental Hazards

Acute hazards to the aquatic environment	Category 2

Unknown toxicity - Environment

Acute hazards to the aquatic environment	0.07 %
Chronic hazards to the aquatic environment	100 %

Label Elements

Hazard Symbol:

Signal Word: Danger

Hazard Statement: Flammable liquid and vapor.
Harmful if swallowed, in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye irritation.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure.
Toxic to aquatic life.

Precautionary Statement

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling.

Response: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

Other hazards which do not result in GHS classification: Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
XYLENES		1330-20-7	60 - 100%
ETHYL BENZENE		100-41-4	15 - 40%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation: Move to fresh air. Get medical attention if symptoms persist.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation persists after washing.

Most important symptoms/effects, acute and delayed

Symptoms: Irritating to eyes, respiratory system and skin.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: Flammable liquid and vapor. In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, fog, CO_2, dry chemical, or alcohol resistant foam.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical: Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Heat may cause the containers to explode. Prevent buildup of vapors or gases to explosive concentrations.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). See Section 8 of the SDS for Personal Protective Equipment. Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment.
Methods and material for containment and cleaning up:	Eliminate all ignition sources if safe to do so. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal. Take precautionary measures against static discharges. Use only non-sparking tools. Stop leak if possible without any risk.
Notification Procedures:	Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
Environmental Precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

7. Handling and storage

Precautions for safe handling:	Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Take precautionary measures against static discharges. Do not breathe mist or vapor. Use only with adequate ventilation. Avoid contact with eyes. Avoid contact with skin.
Conditions for safe storage, including any incompatibilities:	Keep away from food, drink and animal feeding stuffs. Keep container tightly closed. Store in a well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values		Source
XYLENES	TWA	100 ppm		US. ACGIH Threshold Limit Values (2011)
	STEL	150 ppm		US. ACGIH Threshold Limit Values (2011)
	STEL	150 ppm	655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm	435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm	655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm	435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm	655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm	435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	100 ppm	435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	100 ppm	435 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	150 ppm	655 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
ETHYL BENZENE	TWA	20 ppm		US. ACGIH Threshold Limit Values (2011)

	REL	100 ppm	435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	125 ppm	545 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	100 ppm	435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	100 ppm	435 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	125 ppm	545 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	30 ppm	130 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2013)
	TWA PEL	5 ppm	22 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2013)

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
XYLENES (Methylhippuric acids: Sampling time: End of shift.)	1.5 g/g (Creatinine in urine)	ACGIH BEL (03 2013)
ETHYL BENZENE (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift.)	0.15 g/g (Creatinine in urine)	ACGIH BEL (02 2014)

Appropriate Engineering Controls Use explosion-proof ventilation equipment to stay below exposure limits.

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Eye/face protection: Wear safety glasses with side shields (or goggles). Wear face shield if there is risk of splashes.

Skin Protection

Hand Protection: Chemical resistant gloves

Other: Wear suitable protective clothing.

Respiratory Protection: In case of inadequate ventilation use suitable respirator.

Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Provide eyewash station and safety shower. Wash hands before breaks and immediately after handling the product. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash contaminated clothing before reuse.

9. Physical and chemical properties

Appearance

Physical state: liquid

Form: liquid

Color:	Colorless
Odor:	Characteristic
Odor threshold:	No data available.
pH:	not applicable
Melting point/freezing point:	-41.5 °C
Initial boiling point and boiling range:	139 °C
Flash Point:	29 °C
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	7 %(V)
Flammability limit - lower (%):	1 %(V)
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	1.1 kPa
Vapor density:	No data available.
Relative density:	0.86 (20 °C)
Solubility(ies)	
Solubility in water:	Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	464 °C
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, sparks, flames. Contact with incompatible materials.
Incompatible Materials:	Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	May be harmful if swallowed.
Inhalation:	Harmful if inhaled.
Skin Contact:	Harmful in contact with skin. Causes skin irritation.
Eye contact:	Causes serious eye irritation.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: ATEmix (Rat): 4,125.89 mg/kg

Dermal
Product: ATEmix (Rabbit): 1,358.02 mg/kg

Inhalation
Product: No data available.

Specified substance(s):
XYLENES LC 50 (Rat, 4 h): 6,350 mg/l
LC Lo (Rat, 4 h): 8,000 mg/l

Repeated dose toxicity
Product: None known.

Skin Corrosion/Irritation
Product: Causes skin irritation.

Serious Eye Damage/Eye Irritation
Product: Causes serious eye irritation.

Respiratory or Skin Sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: Suspected of causing cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

ETHYL BENZENE Overall evaluation: 2B. Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive toxicity
Product: May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure
Product: Narcotic effect. Respiratory tract irritation.

Specific Target Organ Toxicity - Repeated Exposure
Product: Central nervous system. Lungs. auditory organs

Aspiration Hazard
Product: May be fatal if swallowed and enters airways.

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

XYLENES
LC 50 (Bluegill (Lepomis macrochirus), 96 h): 10.464 - 13.762 mg/l Mortality
LC 50 (Fathead minnow (Pimephales promelas), 96 h): 25.62 - 32.64 mg/l Mortality
LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 6.7 - 10 mg/l Mortality

ETHYL BENZENE
LC 50 (Fathead minnow (Pimephales promelas), 96 h): 9.1 - 15.6 mg/l Mortality
LC 50 (Bluegill (Lepomis macrochirus), 96 h): 93 - 211 mg/l Mortality
LC 50 (Carp (Leuciscus idus melanotus), 48 h): 44 mg/l Mortality

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

XYLENES
LC 50 (Water flea (Daphnia magna), 24 h): 150 mg/l Mortality
LC 50 (Daggerblade grass shrimp (Palaemonetes pugio), 96 h): 7.4 mg/l Mortality
LC 50 (Calanoid copepod (Diaptomus forbesi), 96 h): 99.5 mg/l Mortality
LC 50 (Water flea (Daphnia magna), 24 h): > 100 - 1,000 mg/l Mortality

ETHYL BENZENE
EC 50 (Water flea (Daphnia magna), 48 h): 1.37 - 4.4 mg/l Intoxication
EC 50 (Brine shrimp (Artemia sp.), 48 h): 3.58 - 9.46 mg/l Intoxication
LC 50 (Water flea (Daphnia magna), 48 h): 10.6 - 17.2 mg/l Mortality
LC 50 (Brine shrimp (Artemia sp.), 48 h): 3.91 - 13.7 mg/l Mortality
LC 50 (Opossum shrimp (Americamysis bahia), 24 h): > 5.2 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD Ratio

Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)

Product:	No data available.
Specified substance(s):	
XYLENES	Log Kow: 3.12 - 3.20
ETHYL BENZENE	Log Kow: 3.15

Mobility in Soil:	The product is insoluble in water and will spread on the water surface.
Other Adverse Effects:	Toxic to aquatic life.

13. Disposal considerations

Disposal instructions:	Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Contaminated Packaging:	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN Number:	UN 1307
UN Proper Shipping Name:	Xylenes
Transport Hazard Class(es)	
Class(es):	3
Label(s):	3
Packing Group:	III
Marine Pollutant:	Not a Marine Pollutant
Special precautions for user:	–

IMDG

UN Number:	UN 1307
UN Proper Shipping Name:	XYLENES
Transport Hazard Class(es)	
Class(es):	3
Label(s):	3
EmS No.:	F-E, S-D
Packing Group:	III
Marine Pollutant:	Not a Marine Pollutant
Special precautions for user:	–

IATA

UN Number:	UN 1307
Proper Shipping Name:	Xylenes
Transport Hazard Class(es):	
Class(es):	3
Label(s):	3
Marine Pollutant:	Not a Marine Pollutant
Packing Group:	III
Special precautions for user:	–

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity	Reportable quantity
XYLENES	100 lbs.
ETHYL BENZENE	1000 lbs.
TOLUENE	1000 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Acute (Immediate)
Chronic (Delayed)
Fire

SARA 302 Extremely Hazardous Substance
None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

Chemical Identity	Reportable quantity
XYLENES	100 lbs.
ETHYL BENZENE	1000 lbs.
TOLUENE	1000 lbs.

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
XYLENES	10000 lbs
ETHYL BENZENE	10000 lbs
TOLUENE	10000 lbs

SARA 313 (TRI Reporting)

Chemical Identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
XYLENES	10000 lbs	25000 lbs.
ETHYL BENZENE	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Chemical Identity	Reportable quantity
XYLENES	Reportable quantity: 100 lbs.
ETHYL BENZENE	Reportable quantity: 1000 lbs.
TOLUENE	Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

ETHYL BENZENE	Carcinogenic.
TOLUENE	Developmental toxin.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
XYLENES
ETHYL BENZENE

US. Massachusetts RTK - Substance List

Chemical Identity
XYLENES
ETHYL BENZENE

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
XYLENES
ETHYL BENZENE

US. Rhode Island RTK

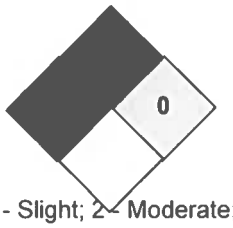
Chemical Identity
XYLENES
ETHYL BENZENE

Inventory Status:

China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Canada NDSL Inventory:	not applicable
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory

16.Other information, including date of preparation or last revision

NFPA Hazard ID



Flammability
Health
Reactivity
Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date:	06-24-2016
Revision Date:	No data available.
Version #:	2.0
Further Information:	No data available.

Disclaimer:

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CRP5388
CMT05702
DCQ12650A

SAFETY DATA SHEET

DOW CORNING

DOW CORNING(R) Q1-2650 ADHESION PROMOTER PART A

Version	Revision Date:	SDS Number:	Date of last issue: 04/08/2016
3.2	11/01/2016	980380-00006	Date of first issue: 12/17/2014

SECTION 1. IDENTIFICATION

Product name	:	DOW CORNING(R) Q1-2650 ADHESION PROMOTER PART A
Product code	:	000000000004042374

Manufacturer or supplier's details

Company name of supplier	:	Dow Corning Corporation
Address	:	South Saginaw Road Midland Michigan 48686
Telephone	:	(989) 496-6000
Emergency telephone	:	24 Hour Emergency Telephone : (989) 496-5900 CHEMTREC : (800) 424-9300

Recommended use of the chemical and restrictions on use

Recommended use	:	Adhesive, binding agents

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids	:	Category 2
Serious eye damage	:	Category 1
Respiratory sensitization	:	Category 1
Skin sensitization	:	Category 1
Specific target organ systemic toxicity - single exposure	:	Category 3

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H225 Highly flammable liquid and vapor.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H336 May cause drowsiness or dizziness.

Precautionary Statements :

Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing spray.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Vapors may form explosive mixture with air.
Static-accumulating flammable liquid.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Silicone in solvent

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Propan-2-ol	67-63-0	>= 70 - < 90
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	1760-24-3	>= 10 - < 20
Oligomers of aminoalkylmethoxysilanes	Not Assigned	>= 1 - < 5
Methanol	67-56-1	>= 0.1 - < 1
Ethylenediamine	107-15-3	>= 0.1 - < 1

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention immediately.

If swallowed : If swallowed, DO NOT induce vomiting.
Get medical attention.
Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed : May cause an allergic skin reaction.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause drowsiness or dizziness.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray
Alcohol-resistant foam

		Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Do not use a solid water stream as it may scatter and spread fire. Flash back possible over considerable distance. Vapors may form explosive mixtures with air. Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Carbon oxides Silicon oxides Nitrogen oxides (NOx) Formaldehyde
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Remove all sources of ignition. Ventilate the area. Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.
Environmental precautions	:	Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapors/mists with a water spray jet. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures	:	Ensure all equipment is electrically grounded before beginning transfer operations. This material can accumulate static charge due to its inherent physical properties and can therefore cause an electrical ignition source to vapors. In order to prevent a fire hazard, as bonding and grounding may be insufficient to remove static electricity, it is necessary to provide an inert gas purge before beginning transfer operations. Restrict flow velocity in order to reduce the accumulation of static electricity.
Local/Total ventilation	:	Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation.
Advice on safe handling	:	Do not get on skin or clothing. Do not breathe vapors or spray mist. Do not swallow. Do not get in eyes. Handle in accordance with good industrial hygiene and safety practice. Non-sparking tools should be used. Keep container tightly closed. Keep away from water. Protect from moisture. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment.
Conditions for safe storage	:	Keep in properly labeled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.
Materials to avoid	:	Do not store with the following product types: Strong oxidizing agents Organic peroxides Flammable solids Pyrophoric liquids Pyrophoric solids Self-heating substances and mixtures

Substances and mixtures which in contact with water emit flammable gases
Explosives
Gases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Propan-2-ol	67-63-0	TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
		TWA	400 ppm 980 mg/m³	NIOSH REL
		ST	500 ppm 1,225 mg/m³	NIOSH REL
		TWA	400 ppm 980 mg/m³	OSHA Z-1
Methanol	67-56-1	TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
		TWA	200 ppm 260 mg/m³	NIOSH REL
		ST	250 ppm 325 mg/m³	NIOSH REL
		TWA	200 ppm 260 mg/m³	OSHA Z-1
Ethylenediamine	107-15-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 25 mg/m³	NIOSH REL
		TWA	10 ppm 25 mg/m³	OSHA Z-1

Hazardous components without workplace control parameters

Ingredients	CAS-No.
N-(3-(Trimethoxysi-lyl)propyl)ethylenediamine	1760-24-3
Oligomers of aminoalkyl-methoxysilanes	Not Assigned

Occupational exposure limits of decomposition products

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Methanol	67-56-1	TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
		TWA	200 ppm 260 mg/m³	NIOSH REL
		ST	250 ppm	NIOSH REL

			325 mg/m³	
		TWA	200 ppm 260 mg/m³	OSHA Z-1

Biological occupational exposure limits

Ingredients	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentra-tion	Basis
Propan-2-ol	67-63-0	Acetone	Urine	End of shift at end of work-week	40 mg/l	ACGIH BEI
Methanol	67-56-1	Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

Engineering measures : Processing may form hazardous compounds (see section 10).
Minimize workplace exposure concentrations.
Use only in an area equipped with explosion proof exhaust ventilation.
Use with local exhaust ventilation.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection
Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Take note that the product is flammable, which may impact the selection of hand

protection. Wash hands before breaks and at the end of workday.

Eye protection : Wear the following personal protective equipment:
Chemical resistant goggles must be worn.
If splashes are likely to occur, wear:
Face-shield

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Wear the following personal protective equipment:
Flame retardant antistatic protective clothing.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are located close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.
These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.
For further information regarding the use of silicones / organic oils in consumer aerosol applications, please refer to the guidance document regarding the use of these type of materials in consumer aerosol applications that has been developed by the silicone industry (www.SEHSC.com) or contact the Dow Corning customer service group.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	No data available
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	> 35 °C
Flash point	:	11.6 °C Method: Pensky-Martens closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable

Self-ignition	:	The substance or mixture is not classified as pyrophoric. The substance or mixture is not classified as self heating.
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	0.82
Solubility(ies) Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, kinematic	:	2 cSt
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Highly flammable liquid and vapor. Vapors may form explosive mixture with air. Use at elevated temperatures may form highly hazardous compounds. Can react with strong oxidizing agents. When heated to temperatures above 180 °C (356 °F) in the presence of air, trace quantities of formaldehyde may be released. Adequate ventilation is required. See OSHA formaldehyde standard, 29 CFR 1910.1048 Hazardous decomposition products will be formed upon con-

tact with water or humid air.
Hazardous decomposition products will be formed at elevated temperatures.

Conditions to avoid : Exposure to moisture.
Handling operations that can promote accumulation of static charges.
Heat, flames and sparks.

Incompatible materials : Oxidizing agents
Water

Hazardous decomposition products

Contact with water or humid air : Methanol

Thermal decomposition : Formaldehyde

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 66.32 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Ingredients:

Propan-2-ol:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 72.6 mg/l
Exposure time: 4 h
Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Acute oral toxicity	:	LD50 (Rat): 2,295 mg/kg Remarks: On basis of test data.
Acute inhalation toxicity	:	LC50 (Rat): > 1.49 mg/l Exposure time: 4 h Test atmosphere: dust/mist Remarks: On basis of test data.
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity Remarks: On basis of test data.

Methanol:

Acute oral toxicity	:	Acute toxicity estimate (Humans): 300 mg/kg Method: Expert judgment
Acute inhalation toxicity	:	Acute toxicity estimate: 3 mg/l Exposure time: 4 h Test atmosphere: vapor Method: Expert judgment Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI
Acute dermal toxicity	:	Acute toxicity estimate (Humans): 300 mg/kg Method: Expert judgment

Ethylenediamine:

Acute oral toxicity	:	LD50 (Rat): 866 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 14.7 mg/l Exposure time: 4 h Test atmosphere: vapor Assessment: Corrosive to the respiratory tract.
Acute dermal toxicity	:	LD50 (Rabbit): 560 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Ingredients:

Propan-2-ol:

Species: Rabbit
Result: No skin irritation

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Species: Rabbit

Result: Mild skin irritation
Remarks: On basis of test data.

Oligomers of aminoalkylmethoxysilanes:
Species: Rabbit
Result: Mild skin irritation
Remarks: On basis of test data.

Methanol:
Species: Rabbit
Result: No skin irritation

Ethylenediamine:
Species: Rabbit
Result: Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation
Causes serious eye damage.

Ingredients:

Propan-2-ol:
Species: Rabbit
Result: Irritation to eyes, reversing within 21 days

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:
Species: Rabbit
Result: Irreversible effects on the eye
Remarks: On basis of test data.

Oligomers of aminoalkylmethoxysilanes:
Species: Rabbit
Result: Irreversible effects on the eye
Remarks: On basis of test data.

Methanol:
Species: Rabbit
Result: No eye irritation

Ethylenediamine:
Species: Rabbit
Result: Irreversible effects on the eye

Respiratory or skin sensitization

Skin sensitization
May cause an allergic skin reaction.

Respiratory sensitization

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Ingredients:

Propan-2-ol:

Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Assessment: Probability or evidence of skin sensitization in humans

Test Type: Maximization Test
Species: Guinea pig
Remarks: Information taken from reference works and the literature.

Oligomers of aminoalkylmethoxysilanes:

Assessment: Probability or evidence of skin sensitization in humans

Test Type: Maximization Test
Species: Guinea pig
Remarks: Information taken from reference works and the literature.

Methanol:

Test Type: Maximization Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative

Ethylenediamine:

Test Type: Maximization Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: positive

Assessment: Probability or evidence of low to moderate skin sensitization rate in humans

Assessment: Probability of respiratory sensitization in humans based on animal testing
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

Propan-2-ol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Methanol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

: Test Type: In vitro mammalian cell gene mutation test
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Ethylenediamine:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: positive

: Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Not classified based on available information.

Ingredients:

Propan-2-ol:

Species: Rat
Application Route: inhalation (vapor)
Exposure time: 104 weeks
Method: OECD Test Guideline 451
Result: negative

Methanol:

Species: Mouse
Application Route: inhalation (vapor)
Exposure time: 18 Months
Result: negative

Ethylenediamine:

Species: Mouse
Application Route: Skin contact
Exposure time: 2 Years
Result: negative

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:

Propan-2-ol:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative
Effects on fetal development	:	Test Type: Embryo-fetal development Species: Rat Application Route: Ingestion Result: negative

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Effects on fertility	:	Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test Application Route: Ingestion Symptoms: No effects on fertility. Remarks: On basis of test data.
Effects on fetal development	:	Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test Application Route: Ingestion Symptoms: No effects on fetal development. Remarks: On basis of test data.

Reproductive toxicity - Assessment	:	No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

Methanol:

Effects on fertility	:	Test Type: Fertility/early embryonic development Species: Mouse Application Route: Ingestion Result: negative
Effects on fetal development	:	Test Type: Embryo-fetal development Species: Mouse Application Route: Ingestion Result: positive Remarks: The effects were seen only at maternally toxic doses.

Ethylenediamine:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative
Effects on fetal development	:	Test Type: Embryo-fetal development Species: Rat Application Route: Ingestion Result: negative Remarks: Based on data from similar materials

STOT-single exposure

May cause drowsiness or dizziness.

Ingredients:

Propan-2-ol:

Assessment: May cause drowsiness or dizziness.

Methanol:

Target Organs: Eyes, Central nervous system
Assessment: Causes damage to organs.

STOT-repeated exposure

Not classified based on available information.

Ingredients:

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Routes of exposure: Ingestion
Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Ethylenediamine:

Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Repeated dose toxicity

Ingredients:

Propan-2-ol:

Species: Rat
NOAEL: 5000 ppm
Application Route: inhalation (vapor)
Exposure time: 104 Weeks
Method: OECD Test Guideline 413

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Application Route: Ingestion
Remarks: On basis of test data.

Methanol:

Species: Rat
NOAEL: 1.06 mg/l
Application Route: inhalation (vapor)
Exposure time: 90 Days

Ethylenediamine:

Species: Rat
NOAEL: 22 mg/kg
LOAEL: 114 mg/kg
Application Route: Ingestion
Exposure time: 90 Days

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Propan-2-ol:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 10,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 24 h
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): > 1,050 mg/l Exposure time: 16 h

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 597 mg/l Exposure time: 96 h Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia sp. (Water flea)): 81 mg/l Exposure time: 48 h Method: Directive 67/548/EEC, Annex V, C.2.
Toxicity to algae	:	ErC50 (Selenastrum capricornutum (green algae)): 8.8 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 NOEC (Selenastrum capricornutum (green algae)): 3.1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia sp. (Water flea)): > 1 mg/l Exposure time: 21 d
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): 67 mg/l Exposure time: 16 h Method: DIN 38 412 Part 8

Oligomers of aminoalkylmethoxysilanes:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 597 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia sp. (Water flea)): 37 mg/l Exposure time: 48 h Remarks: Based on data from similar materials
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 8.8 mg/l Exposure time: 72 h Remarks: Based on data from similar materials NOEC (Pseudokirchneriella subcapitata (green algae)): 3.1 mg/l Exposure time: 72 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia sp. (Water flea)): > 1 mg/l Exposure time: 21 d Remarks: Based on data from similar materials

Methanol:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 15,400 mg/l

		Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 22,000 mg/l Exposure time: 96 h Method: OECD Test Guideline 201
Toxicity to fish (Chronic toxicity)	:	NOEC (Oryzias latipes (Orange-red killifish)): 15,800 mg/l Exposure time: 200 h
Toxicity to microorganisms	:	IC50: > 1,000 mg/l Exposure time: 3 h

Ethylenediamine:

Toxicity to fish	:	LC50 (Poecilia reticulata (guppy)): 640 mg/l Exposure time: 96 h Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 16.7 mg/l Exposure time: 48 h Method: Directive 67/548/EEC, Annex V, C.2.
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 645 mg/l Exposure time: 72 h Method: Directive 67/548/EEC, Annex V, C.3. NOEC (Pseudokirchneriella subcapitata (green algae)): 3.2 mg/l Exposure time: 72 h Method: Directive 67/548/EEC, Annex V, C.3.
Toxicity to fish (Chronic toxicity)	:	NOEC (Gasterosteus aculeatus (threespine stickleback)): > 10 mg/l Exposure time: 28 d Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.16 mg/l Exposure time: 21 d
Toxicity to microorganisms	:	EC50: 3.2 mg/l Exposure time: 2 h

Persistence and degradability

Ingredients:

Propan-2-ol:

Biodegradability	:	Result: rapidly degradable

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 39 %
Method: OECD Test Guideline 301A

Stability in water : Degradation half life: 0.025 h (24.7 °C) pH: 7
Method: OECD Test Guideline 111

Oligomers of aminoalkylmethoxysilanes:

Biodegradability : Result: Not readily biodegradable.

Methanol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 95 %
Exposure time: 20 d

Ethylenediamine:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 95 %
Exposure time: 28 d
Method: Directive 67/548/EEC Annex V, C.4.E.

Bioaccumulative potential

Ingredients:

Propan-2-ol:

Partition coefficient: n-octanol/water : log Pow: 0.05

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

Partition coefficient: n-octanol/water : log Pow: -0.3

Methanol:

Bioaccumulation : Species: Leuciscus idus (Golden orfe)
Bioconcentration factor (BCF): < 10

Partition coefficient: n-octanol/water : log Pow: -0.77

Ethylenediamine:

Partition coefficient: n-octanol/water : log Pow: -2 - -1.3

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Resource Conservation and Recovery Act (RCRA)	:	When a decision is made to discard this material as supplied, it is classified as a RCRA hazardous waste.
Waste Code	:	D001: Ignitability
Waste from residues	:	Dispose of in accordance with local regulations.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal. Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 1219
Proper shipping name	:	ISOPROPANOL SOLUTION
Class	:	3
Packing group	:	II
Labels	:	3

IATA-DGR

UN/ID No.	:	UN 1219
Proper shipping name	:	Isopropanol solution
Class	:	3
Packing group	:	II
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	364
Packing instruction (passenger aircraft)	:	353

IMDG-Code

UN number	:	UN 1219
Proper shipping name	:	ISOPROPANOL SOLUTION
Class	:	3
Packing group	:	II

Labels : 3
EmS Code : F-E, S-D
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number : UN 1219
Proper shipping name : Isopropanol SOLUTION

Class : 3
Packing group : II
Labels : FLAMMABLE LIQUID
ERG Code : 129
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Methanol	67-56-1	5000	*
Ethylenediamine	107-15-3	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethylenediamine	107-15-3	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Propan-2-ol	67-63-0	70 - 90 %

US State Regulations

Pennsylvania Right To Know

Propan-2-ol	67-63-0
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	1760-24-3
Oligomers of aminoalkylmethoxysilanes	Not Assigned
Methanol	67-56-1

	Ethylenediamine	107-15-3
California Prop. 65	WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.	
	Methanol	67-56-1

California List of Hazardous Substances

Propan-2-ol	67-63-0

California Permissible Exposure Limits for Chemical Contaminants

Propan-2-ol	67-63-0

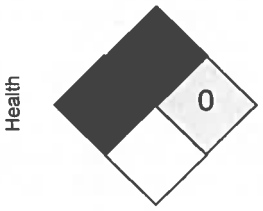
The ingredients of this product are reported in the following inventories:

TSCA : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS® IV:

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA Z-1 / TWA	:	8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/
Revision Date	:	11/01/2016

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8

CRP5388
CMT05703
DCQ12650B

SAFETY DATA SHEET

DOW CORNING

DOW CORNING(R) Q1-2650 ADHESION PROMOTER PART B

Version	Revision Date:	SDS Number:	Date of last issue: 03/18/2016
2.1	11/01/2016	730171-00005	Date of first issue: 11/10/2014

SECTION 1. IDENTIFICATION

Product name	:	DOW CORNING(R) Q1-2650 ADHESION PROMOTER PART B
Product code	:	000000000004042373

Manufacturer or supplier's details

Company name of supplier	:	Dow Corning Corporation
Address	:	South Saginaw Road Midland Michigan 48686
Telephone	:	(989) 496-6000
Emergency telephone	:	24 Hour Emergency Telephone : (989) 496-5900 CHEMTREC : (800) 424-9300

Recommended use of the chemical and restrictions on use

Recommended use	:	Adhesive, binding agents

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids	:	Category 2
Acute toxicity (Oral)	:	Category 4
Skin irritation	:	Category 2
Eye irritation	:	Category 2A
Skin sensitization	:	Category 1
Germ cell mutagenicity	:	Category 2
Reproductive toxicity	:	Category 1B
Specific target organ systemic toxicity - single exposure	:	Category 1 (Immune system)
Specific target organ systemic toxicity - single exposure	:	Category 3
Specific target organ systemic toxicity - repeated exposure	:	Category 1 (Immune system)

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H225 Highly flammable liquid and vapor.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H341 Suspected of causing genetic defects.
H360FD May damage fertility. May damage the unborn child.
H370 Causes damage to organs (Immune system).
H372 Causes damage to organs (Immune system) through prolonged or repeated exposure.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Vapors may form explosive mixture with air.
Static-accumulating flammable liquid.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Silicone in solvent

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Propan-2-ol	67-63-0	>= 90 - <= 100
Dibutyltin diacetate	1067-33-0	>= 1 - < 5

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention.

If swallowed	:	If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	:	Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause drowsiness or dizziness. Suspected of causing genetic defects. May damage fertility. May damage the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
Notes to physician	:	Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Do not use a solid water stream as it may scatter and spread fire. Flash back possible over considerable distance. Vapors may form explosive mixtures with air. Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Carbon oxides Metal oxides
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Remove all sources of ignition. Ventilate the area. Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.
Environmental precautions	:	Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapors/mists with a water spray jet. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures	:	Ensure all equipment is electrically grounded before beginning transfer operations. This material can accumulate static charge due to its inherent physical properties and can therefore cause an electrical ignition source to vapors. In order to prevent a fire hazard, as bonding and grounding may be insufficient to remove static electricity, it is necessary to provide an inert gas purge before beginning transfer operations. Restrict flow velocity in order to reduce the accumulation of static electricity.
Local/Total ventilation	:	Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation.
Advice on safe handling	:	Do not get on skin or clothing. Do not breathe vapors or spray mist. Do not swallow. Do not get in eyes. Handle in accordance with good industrial hygiene and safety

practice.
Non-sparking tools should be used.
Keep container tightly closed.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled containers.
Store locked up.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Store in accordance with the particular national regulations.
Keep away from heat and sources of ignition.

Materials to avoid : Do not store with the following product types:
Strong oxidizing agents
Organic peroxides
Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures which in contact with water emit flammable gases
Explosives
Gases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Propan-2-ol	67-63-0	TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
		TWA	400 ppm 980 mg/m³	NIOSH REL
		ST	500 ppm 1,225 mg/m³	NIOSH REL
		TWA	400 ppm 980 mg/m³	OSHA Z-1
Dibutyltin diacetate	1067-33-0	TWA	0.1 mg/m³ (Tin)	OSHA Z-1
		TWA	0.1 mg/m³ (Tin)	ACGIH
		STEL	0.2 mg/m³ (Tin)	ACGIH
		TWA	0.1 mg/m³ (Tin)	NIOSH REL

Biological occupational exposure limits

Ingredients	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentra-tion	Basis
Propan-2-ol	67-63-0	Acetone	Urine	End of shift at end of work-week	40 mg/l	ACGIH BEI

Engineering measures : Minimize workplace exposure concentrations.
Use only in an area equipped with explosion proof exhaust ventilation.
Use with local exhaust ventilation.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection
Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Take note that the product is flammable, which may impact the selection of hand protection. Wash hands before breaks and at the end of workday.

Eye protection : Wear the following personal protective equipment:
Safety goggles

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Wear the following personal protective equipment:
Flame retardant antistatic protective clothing.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Hygiene measures	:	Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use. These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions. For further information regarding the use of silicones / organic oils in consumer aerosol applications, please refer to the guidance document regarding the use of these type of materials in consumer aerosol applications that has been developed by the silicone industry (www.SEHSC.com) or contact the Dow Corning customer service group.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	No data available
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	> 35 °C
Flash point	:	11.6 °C Method: Pensky-Martens closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Self-ignition	:	The substance or mixture is not classified as pyrophoric. The substance or mixture is not classified as self heating.
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	0.79

Solubility(ies) Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, kinematic	:	2 cSt
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Highly flammable liquid and vapor. Vapors may form explosive mixture with air. Can react with strong oxidizing agents. When heated to temperatures above 180 °C (356 °F) in the presence of air, trace quantities of formaldehyde may be released. Adequate ventilation is required. See OSHA formaldehyde standard, 29 CFR 1910.1048
Conditions to avoid	:	Handling operations that can promote accumulation of static charges. Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity	:	Acute toxicity estimate: 1,600 mg/kg Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

Ingredients:

Propan-2-ol:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 72.6 mg/l Exposure time: 4 h Test atmosphere: vapor
Acute dermal toxicity	:	LD50 (Rat): > 5,000 mg/kg

Dibutyltin diacetate:

Acute oral toxicity	:	LD50 (Rat): 32 mg/kg
Acute inhalation toxicity	:	Assessment: Corrosive to the respiratory tract.
Acute dermal toxicity	:	LD50 (Rabbit): 2,320 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Ingredients:

Propan-2-ol:

Species: Rabbit
Result: No skin irritation

Dibutyltin diacetate:

Method: OECD Test Guideline 431
Result: Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation

Causes serious eye irritation.

Ingredients:

Propan-2-ol:

Species: Rabbit
Result: Irritation to eyes, reversing within 21 days

Dibutyltin diacetate:

Result: Irreversible effects on the eye
Remarks: Based on skin corrosivity.

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

Ingredients:

Propan-2-ol:

Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Dibutyltin diacetate:

Test Type: Maximization Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: positive
Remarks: Based on data from similar materials

Assessment: Probability or evidence of low to moderate skin sensitization rate in humans

Germ cell mutagenicity

Suspected of causing genetic defects.

Ingredients:

Propan-2-ol:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Intraperitoneal injection Result: negative

Dibutyltin diacetate:

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Result: positive Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)

Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 474
Result: positive
Remarks: Based on data from similar materials

Germ cell mutagenicity - Assessment : Positive result(s) from in vivo mammalian somatic cell mutagenicity tests.

Carcinogenicity

Not classified based on available information.

Ingredients:

Propan-2-ol:

Species: Rat
Application Route: inhalation (vapor)
Exposure time: 104 weeks
Method: OECD Test Guideline 451
Result: negative

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

May damage fertility. May damage the unborn child.

Ingredients:

Propan-2-ol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Result: negative

Dibutyltin diacetate:

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test

		Species: Rat Application Route: Ingestion Result: positive
Effects on fetal development	:	Test Type: Embryo-fetal development Species: Rat Application Route: Ingestion Method: OECD Test Guideline 414 Result: positive
Reproductive toxicity - Assessment	:	Clear evidence of adverse effects on sexual function and fertility, based on animal experiments., Clear evidence of adverse effects on development, based on animal experiments.

STOT-single exposure

May cause drowsiness or dizziness.
Causes damage to organs (Immune system).

Ingredients:

Propan-2-ol:

Assessment: May cause drowsiness or dizziness.

Dibutyltin diacetate:

Routes of exposure: Ingestion
Target Organs: Immune system
Assessment: Shown to produce significant health effects in animals at concentrations of 300 mg/kg bw or less.

STOT-repeated exposure

Causes damage to organs (Immune system) through prolonged or repeated exposure.

Ingredients:

Dibutyltin diacetate:

Routes of exposure: Ingestion
Target Organs: Immune system
Assessment: Shown to produce significant health effects in animals at concentrations of 10 mg/kg bw or less.

Repeated dose toxicity

Ingredients:

Propan-2-ol:

Species: Rat
NOAEL: 5000 ppm
Application Route: inhalation (vapor)
Exposure time: 104 Weeks
Method: OECD Test Guideline 413

Dibutyltin diacetate:

Species: Rat
NOAEL: 2 mg/kg
Application Route: Ingestion
Exposure time: 90 Days
Remarks: Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Propan-2-ol:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 10,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 24 h
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): > 1,050 mg/l Exposure time: 16 h

Dibutyltin diacetate:

Toxicity to fish	:	(Danio rerio (zebra fish)): Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1.4 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	:	EC50 (Skeletonema costatum (marine diatom)): 304 µg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50: > 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

Persistence and degradability

Ingredients:

Propan-2-ol:

Biodegradability	:	Result: rapidly degradable

Dibutyltin diacetate:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 23 %
Exposure time: 39 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

Bioaccumulative potential

Ingredients:

Propan-2-ol:

Partition coefficient: n-octanol/water : log Pow: 0.05

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Resource Conservation and Recovery Act (RCRA) : When a decision is made to discard this material as supplied, it is classified as a RCRA hazardous waste.

Waste Code : D001: Ignitability

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
Empty containers retain residue and can be dangerous.
Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.
If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 1219
Proper shipping name : ISOPROPANOL SOLUTION
Class : 3
Packing group : II
Labels : 3

IATA-DGR

UN/ID No.	:	UN 1219
Proper shipping name	:	Isopropanol solution
Class	:	3
Packing group	:	II
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	364
Packing instruction (passenger aircraft)	:	353

IMDG-Code

UN number	:	UN 1219
Proper shipping name	:	ISOPROPANOL SOLUTION
Class	:	3
Packing group	:	II
Labels	:	3
EmS Code	:	F-E, S-D
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 1219
Proper shipping name	:	Isopropanol SOLUTION
Class	:	3
Packing group	:	II
Labels	:	FLAMMABLE LIQUID
ERG Code	:	129
Marine pollutant	:	yes(Dibutyltin diacetate)

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Propan-2-ol	67-63-0	90 - 100 %

US State Regulations

Pennsylvania Right To Know

Propan-2-ol	67-63-0

California Prop. 65 This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

California List of Hazardous Substances

Propan-2-ol	67-63-0
Dibutyltin diacetate	1067-33-0

California Permissible Exposure Limits for Chemical Contaminants

Propan-2-ol	67-63-0
Dibutyltin diacetate	1067-33-0

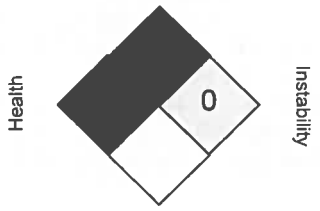
The ingredients of this product are reported in the following inventories:

TSCA : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS® IV:

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Lim-

		its for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA Z-1 / TWA	:	8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/
Revision Date	:	11/01/2016

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a

guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8

CRP24466
H35500APXA

SAFETY DATA SHEET

Issuing Date: 22-Dec-2011 **Revision Date:** 04-Sep-2018

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: 35500APX

Product Name: 36375 GRAY APC URETHANE MIL-PRF-85285E TYPE IV/I, CL H, PART A

Hentzen Coatings, Inc.
6937 West Mill Road, Milwaukee, WI 53218-1225
Company Phone Number: 1-414-353-4200
Emergency telephone number ChemTrec 1-800-424-9300
Recommended use of the chemical and restrictions on use Industrial paint (Paint or Paint-Related), Restricted to professional users

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

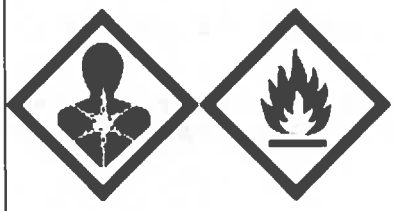
Carcinogenicity	Category 2
Flammable Liquids	Category 2

Label Elements

Emergency Overview

DANGER

Hazard Statements
Suspected of causing cancer
Highly flammable liquid and vapor



Appearance Opaque **Physical state** Liquid **Odor** Solvent

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/Bond container and receiving equipment
Use explosion-proof electrical/ ventilating/ lighting/ equipment
Use only non-sparking tools
Take precautionary measures against static discharge

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
In case of fire: Use CO_2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool
Store in accordance with local regulations

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other information
• May be harmful if swallowed

3. COMPOSITION/INFORMATION ON INGREDIENTS

Contains a known or suspected carcinogen

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
TITANIUM DIOXIDE	13463-67-7	10% - 20%	TWA: 10 mg/m³	TWA: 15 mg/m³ total dust
DIMETHYL GLUTARATE	1119-40-0	5% - 10%	N/A	N/A
DIMETHYL SUCCINATE	106-65-0	1% - 5%	N/A	N/A
BUTYL ACETATE	123-86-4	1% - 5%	STEL: 150 ppm TWA: 50 ppm	TWA: 150 ppm TWA: 710 mg/m³
CARBON BLACK	1333-86-4	0% - 1%	TWA: 3 mg/m³ inhalable particulate matter	TWA: 3.5 mg/m³

4. FIRST AID MEASURES

First Aid Measures

General advice — Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye Contact — Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin Contact — Wash off immediately with plenty of water.

Inhalation — Consult a physician if necessary. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Ingestion — Do NOT induce vomiting.

Self-protection of the first aider — Remove all sources of ignition.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects — No information available.

Indication of any immediate medical attention and special treatment needed

Notes to physician — Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific hazards arising from the chemical
Flammable.

Explosion Data
Sensitivity to Mechanical Impact no data available.
Sensitivity to Static Discharge Yes.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Evacuate personnel to safe areas. Ensure adequate ventilation. Remove all sources of ignition. Use personal protective equipment as required. Avoid breathing vapors or mists. Ventilate the area.

Environmental Precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use explosion-proof electrical (ventilation and lighting) equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep away from heat, sparks and flame.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH	OSHA	NIOSH IDLH
TERTIARY BUTYL ACETATE 540-88-5	STEL: 150 ppm TWA: 50 ppm	TWA: 200 ppm TWA: 950 mg/m³	IDLH: 1500 ppm TWA: 200 ppm TWA: 950 mg/m³
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m³	TWA: 15 mg/m³ total dust	IDLH: 5000 mg/m³
ALUMINUM OXIDE 1344-28-1	TWA: 1 mg/m³ respirable particulate matter	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction	
BUTYL ACETATE 123-86-4	STEL: 150 ppm TWA: 50 ppm	TWA: 150 ppm TWA: 710 mg/m³	IDLH: 1700 ppm TWA: 150 ppm TWA: 710 mg/m³ STEL: 200 ppm STEL: 950 mg/m³
CARBON BLACK 1333-86-4	TWA: 3 mg/m³ inhalable particulate matter	TWA: 3.5 mg/m³	IDLH: 1750 mg/m³ TWA: 3.5 mg/m³ TWA: 0.1 mg/m³ Carbon black in presence of Polycyclic aromatic hydrocarbons PAH

NIOSH IDLH: Immediately Dangerous to Life or Health

Exposure controls

Engineering Measures Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Use personal protective equipment as required.

Skin and Body Protection Chemical resistant apron.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	**Appearance**	Opaque
Odor	Solvent.	**Odor Threshold**	No data available
pH	No data available	**Flash Point**	40 °F / 4 °C
Decomposition temperature	No data available	**Boiling Point**	176 °F / 80 °C
Melting Point / Melting Range	No data available	**Freezing Point**	No data available
Vapor Pressure @20°C (kPa)	No data available	**Partition coefficient:**	No data available
Vapor Density	No data available	**Density**	No data available
Bulk density	No data available	**Specific Gravity**	1.14
Evaporation Rate	No data available	**Water solubility**	No data available
Dynamic viscosity	No data available	**Weight per Gallon (lbs/gal):**	9.53
		Flammability Limits in Air	
		Upper	3 %
		Lower	0.4 %

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability
Stable under recommended storage conditions.
Conditions to Avoid
Extremes of temperature and direct sunlight.
Incompatible Materials
None known based on information supplied.
Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information The product has not been tested

Inhalation There is no data for this product.

Eye Contact There is no data for this product.

Skin Contact There is no data for this product.

Ingestion There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
TERTIARY BUTYL ACETATE 540-88-5	= 4100 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 9482 mg/m³ (Rat) 4 h
TITANIUM DIOXIDE 13463-67-7	> 10000 mg/kg (Rat)	N/A	N/A
ALUMINUM OXIDE 1344-28-1	> 5000 mg/kg (Rat)	N/A	N/A
BUTYL ACETATE 123-86-4	= 10768 mg/kg (Rat)	> 17600 mg/kg (Rabbit)	= 390 ppm (Rat) 4 h
CARBON BLACK 1333-86-4	> 15400 mg/kg (Rat)	N/A	N/A

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
MUTAGENIC EFFECTS No information available.
Carcinogenicity This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
CARBON BLACK 1333-86-4	A3	Group 2B	N/A	X

Legend:
ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
Group 3 - Not Classifiable as to Carcinogenicity in Humans
NTP (National Toxicology Program)
Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Reproductive Toxicity	No information available.
Specific target organ systemic toxicity (single exposure)	No information available.
Specific target organ systemic toxicity (repeated exposure)	No information available.
Chronic Toxicity	May cause adverse liver effects.
Target Organ Effects	Central nervous system (CNS), Eyes, Kidney, Liver, Lungs, Peripheral Nervous System (PNS), Respiratory system, Skin.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	4892 mg/kg
ATEmix (dermal)	7540 mg/kg
ATEmix (inhalation-dust/mist)	63.8 mg/l
Oral LD50	5767 mg/kg (rat) Estimated
Dermal LD50	9234 mg/kg (rat) Estimated
Inhalation LC50	319552 mg/l (mist) (dust) mg/m^3 Estimated
Inhalation LC50	ml/m^3 (vapor) Estimated

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
TERTIARY BUTYL ACETATE 540-88-5	N/A	296 - 362: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
BUTYL ACETATE 123-86-4	674.7: 72 h Desmodesmus subspicatus mg/L EC50	17 - 19: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Lepomis macrochirus mg/L LC50 static	N/A

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Chemical Name	Partition coefficient
DIMETHYL SUCCINATE 106-65-0	0.19
BUTYL ACETATE 123-86-4	1.81

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste treatment methods	This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).
US EPA Waste Number	D001

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
BUTYL ACETATE 123-86-4	Toxic

14. TRANSPORT INFORMATION

DOT

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	149, B52, IB2, T4, TP1, TP8, TP28
Description	UN1263, Paint, 3, II, RQ
Emergency Response Guide Number	128

TDG

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

MEX

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

ICAO

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

IATA

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

IMDG/IMO

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, 3, II

ADR/RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, 3, II, (D/E)
ADR/RID-Labels	3

ADN

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, 3, II
Hazard Labels	3
Limited Quantity (LQ)	5 L
Ventilation	VE01

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
ALUMINUM OXIDE	1344-28-1	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CAA (Clean Air Act)

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

Clean Water Act
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
TERTIARY BUTYL ACETATE	N/A	N/A	N/A	X
BUTYL ACETATE	5000 lb	N/A	N/A	X

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
TERTIARY BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
TITANIUM DIOXIDE	13463-67-7	Carcinogen
CARBON BLACK	1333-86-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
TERTIARY BUTYL ACETATE	X	X	X	N/A	X
TITANIUM DIOXIDE	X	X	X	N/A	X
ALUMINUM OXIDE	X	X	X	N/A	X
BUTYL ACETATE	X	X	X	N/A	X
CARBON BLACK	X	X	X	X	X

International Regulations

Mexico - Grade Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
TERTIARY BUTYL ACETATE	N/A	Mexico: TWA 200 ppm Mexico: TWA 950 mg/m^3 Mexico: STEL 250 ppm Mexico: STEL 1190 mg/m^3
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m^3 Mexico: STEL 20 mg/m^3
ALUMINUM OXIDE	N/A	Mexico: TWA 10 mg/m^3
BUTYL ACETATE	N/A	Mexico: TWA 150 ppm Mexico: TWA 710 mg/m^3 Mexico: STEL 200 ppm Mexico: STEL 950 mg/m^3
CARBON BLACK	N/A	Mexico: TWA 3.5 mg/m^3 Mexico: STEL 7 mg/m^3

16. OTHER INFORMATION

NFPA	Health Hazard 2	Flammability 3	Instability 0	Physical and Chemical Hazards -

NFPA Rating

HMIS	Health Hazard 1 *	Flammability 3	Physical Hazard 0	Personal protection X

Chronic Hazard Star Legend ** Chronic Health Hazard*

Issuing Date: 22-Dec-2011
Revision Date: 04-Sep-2018
Revision Note
No information available

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

end

CRP24466
35502CMUB

SAFETY DATA SHEET

Issuing Date: 22-Dec-2011 **Revision Date:** 27-Jul-2020 **Print Date:** 27-Jul-2020

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: 35502CMU

Product Name: CURING AGENT FOR FLAT MIL-PRF-85285E, TY IV, CL H, PART B

Hentzen Coatings, Inc.
6937 West Mill Road, Milwaukee, WI 53218-1225
Company Phone Number: 1-414-353-4200
Emergency telephone number ChemTrec 1-800-424-9300

Recommended use of the chemical and restrictions on use Industrial paint (Paint or Paint-Related), Restricted to professional users

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Corrosion/Irritation	Category 2
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Flammable Liquids	Category 2

Label Elements

Emergency Overview

DANGER

Hazard Statements
Causes skin irritation
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction
Highly flammable liquid and vapor

Appearance Clear **Physical state** Liquid **Odor** Solvent

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/Bond container and receiving equipment
Use explosion-proof electrical/ ventilating/ lighting/ equipment
Use only non-sparking tools

Take precautionary measures against static discharge

If skin irritation or rash occurs: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
In case of fire: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other information
• May be harmful if swallowed
• May be harmful in contact with skin

3. COMPOSITION/INFORMATION ON INGREDIENTS

There are no known carcinogenic chemicals in this product

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
HOMOPOLYMER OF HEXAMETHYLENE DIISOCYANTE	28182-81-2	50% - 60%	N/A	N/A
HEXAMETHYLENE DIISOCYANATE MONOMER	822-06-0	0% - 1%	TWA: 0.005 ppm	N/A

4. FIRST AID MEASURES

First Aid Measures

General advice — Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. If symptoms persist, call a physician.

Eye Contact — Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin Contact — Wash off immediately with soap and plenty of water. Consult a physician if necessary. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

Inhalation — Consult a physician if necessary. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Asthma-like and/ or skin allergy-like symptoms. Immediate medical attention is not required. If symptoms persist, call a physician. Move to fresh air in case of accidental inhalation of vapors or decomposition products.

Ingestion — Do NOT induce vomiting. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Self-protection of the first aider — Remove all sources of ignition. Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use:. Dry chemical. Carbon dioxide (CO_2). Water spray. Alcohol-resistant foam.

Unsuitable Extinguishing Media No information available.

Specific hazards arising from the chemical
Containers may explode when heated or if contaminated with water. Keep product and empty container away from heat and sources of ignition. Risk of ignition. Flammable.

Explosion Data
Sensitivity to Mechanical Impact no data available.
Sensitivity to Static Discharge Yes.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Evacuate personnel to safe areas. Ensure adequate ventilation. Remove all sources of ignition. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Avoid breathing vapors or mists. Ventilate the area.

Other information DECONTAMINATION SOLUTION: Concentrated ammonia (3 - 8%), detergent (2%) and water (90 - 95%), a solution of Union Carbide's Tergitol TMN-10 (20%) and water (80%) or a solution of 50% isopropanol, 45% water, and 5% concentrated ammonia solution(% by weight).

Environmental Precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

Methods and materials for containment and cleaning up

Methods for Containment Decontaminate floor with decontamination solution letting stand for at least 15 minutes. Soak up with inert absorbent material.

Methods for Cleaning Up Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use explosion-proof

electrical (ventilation and lighting) equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use with local exhaust ventilation. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe vapor or mist. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep away from heat, sparks and flame. Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture.

Incompatible Products Water. Glycol ethers. Alcohols. Epoxies. Bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH	OSHA	NIOSH IDLH
TERTIARY BUTYL ACETATE 540-88-5	STEL: 150 ppm TWA: 50 ppm	TWA: 200 ppm TWA: 950 mg/m³	IDLH: 1500 ppm TWA: 200 ppm TWA: 950 mg/m³
HEXAMETHYLENE DIISOCYANATE MONOMER 822-06-0	TWA: 0.005 ppm	N/A	Ceiling: 0.020 ppm 10 min Ceiling: 0.140 mg/m³ 10 min TWA: 0.005 ppm TWA: 0.035 mg/m³

NIOSH IDLH: Immediately Dangerous to Life or Health

Exposure controls

Engineering Measures Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Use personal protective equipment as required.

Skin and Body Protection Chemical resistant apron.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	**Appearance**	Clear
Odor	Solvent.	**Odor Threshold**	No data available
pH	No data available	**Flash Point**	40 °F / 4 °C
Decomposition temperature	No data available	**Boiling Point**	183 °F / 84 °C
Melting Point / Melting Range	No data available	**Freezing Point**	No data available
Vapor Pressure @20°C (kPa)	No data available	**Partition coefficient:**	No data available
Vapor Density	No data available	**Density**	No data available
Bulk density	No data available	**Specific Gravity**	1.01
Evaporation Rate	No data available	**Water solubility**	No data available
Dynamic viscosity	No data available	**Weight per Gallon (lbs/gal):**	8.43
		Flammability Limits in Air	

Upper	2.73 %
Lower	0.51 %

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.
Conditions to Avoid
Heat, flames and sparks.
Incompatible Materials
Water. Glycol ethers. Alcohols. Epoxies. Bases.
Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information The product has not been tested

Inhalation There is no data for this product.

Eye Contact There is no data for this product.

Skin Contact There is no data for this product.

Ingestion There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
HOMOPOLYMER OF HEXAMETHYLENE DIISOCYANTE 28182-81-2	N/A	N/A	= 18500 mg/m³ (Rat) 1 h
TERTIARY BUTYL ACETATE 540-88-5	= 4100 mg/kg (Rat)	> 2 g/kg (Rabbit) > 2000 mg/kg (Rabbit)	> 2230 mg/m³ (Rat) 4 h > 9482 mg/m³ (Rat) 4 h
HEXAMETHYLENE DIISOCYANATE MONOMER 822-06-0	= 738 mg/kg (Rat)	= 593 mg/kg (Rabbit)	= 0.06 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
MUTAGENIC EFFECTS No information available.
Carcinogenicity No information available.
Legend:
Reproductive Toxicity No information available.
Specific target organ systemic toxicity (single exposure) No information available.
Specific target organ systemic toxicity (repeated exposure) No information available.
Chronic Toxicity Avoid repeated exposure.
Target Organ Effects Central nervous system (CNS), Eyes, Peripheral Nervous System (PNS), Respiratory system, Skin.

Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	4115 mg/kg
ATEmix (dermal)	2009 mg/kg
ATEmix (inhalation-dust/mist)	139.5 mg/l
Oral LD50	10183 mg/kg (rat) Estimated
Dermal LD50	5008 mg/kg (rat) Estimated
Inhalation LC50	717166 mg/l (mist) (dust) mg/m³ Estimated
Inhalation LC50	

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
TERTIARY BUTYL ACETATE 540-88-5	N/A	296 - 362: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
HEXAMETHYLENE DIISOCYANATE MONOMER 822-06-0	N/A	26.1: 96 h Brachydanio rerio mg/L LC50 static	N/A

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste treatment methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

US EPA Waste Number D001

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	149, B52, IB2, T4, TP1, TP8, TP28
Description	UN1263, Paint, 3, II, RQ
Emergency Response Guide Number	128

TDG

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

MEX

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

ICAO

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

IATA

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

IMDG/IMO

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, 3, II

ADR/RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, 3, II, (D/E)
ADR/RID-Labels	3

ADN

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, 3, II
Hazard Labels	3

Limited Quantity (LQ)	5 L
Ventilation	VE01

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CAA (Clean Air Act)
U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
HEXAMETHYLENE DIISOCYANATE MONOMER	822-06-0	Present

Clean Water Act
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
TERTIARY BUTYL ACETATE	N/A	N/A	N/A	X

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
TERTIARY BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
HEXAMETHYLENE	100 lb	N/A	RQ 100 lb final RQ

DIISOCYANATE MONOMER			RQ 45.4 kg final RQ

State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
TERTIARY BUTYL ACETATE	X	X	X	N/A	X

International Regulations

Mexico - Grade Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
TERTIARY BUTYL ACETATE	N/A	Mexico: TWA 200 ppm
HEXAMETHYLENE DIISOCYANATE MONOMER	N/A	Mexico: TWA 0.005 ppm

16. OTHER INFORMATION

NFPA **Health Hazard** 2 **Flammability** 3 **Instability** 0 **Physical and Chemical Hazards** -

NFPA Rating

HMIS **Health Hazard** 2 * **Flammability** 3 **Physical Hazard** 1 **Personal protection** X

Chronic Hazard Star Legend ** Chronic Health Hazard*

Issuing Date: 22-Dec-2011
Revision Date: 27-Jul-2020
Revision Note
No information available

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end

SAFETY DATA SHEET

Issuing Date: 22-Dec-2011 **Revision Date:** 06-Mar-2019

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: 31361YPX-T1

Product Name: 33538 YELLOW URETHANE, MIL-PRF-85285E,TYPE I,CLASS H,PART A

Hentzen Coatings, Inc.
6937 West Mill Road, Milwaukee, WI 53218-1225
Company Phone Number: 1-414-353-4200
Emergency telephone number ChemTrec 1-800-424-9300

Recommended use of the chemical and restrictions on use Industrial paint (Paint or Paint-Related), Restricted to professional users

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2
Germ Cell Mutagenicity	Category 1B
Carcinogenicity	Category 1A
Flammable Liquids	Category 2

Label Elements

Emergency Overview

DANGER

Hazard Statements
Harmful if swallowed
harmful if inhaled
Causes serious eye irritation
May cause genetic defects
May cause cancer
Highly flammable liquid and vapor

Appearance Opaque **Physical state** Liquid **Odor** Solvent

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area
Wear eye/face protection
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/Bond container and receiving equipment
Use explosion-proof electrical/ ventilating/ lighting/ equipment
Use only non-sparking tools
Take precautionary measures against static discharge

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
In case of fire: Use CO_2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool
Store in accordance with local regulations

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other information
• May be harmful in contact with skin

3. COMPOSITION/INFORMATION ON INGREDIENTS

Contains a known or suspected carcinogen

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
METHYL AMYL KETONE	110-43-0	20% - 30%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m³
METHYL ACETATE	79-20-9	10% - 20%	STEL: 250 ppm TWA: 200 ppm	TWA: 200 ppm TWA: 610 mg/m³
CRISTOBLITE CRYSTALLINE SILICA	14464-46-1	10% - 20%	TWA: 0.025 mg/m³ respirable particulate matter	TWA: 50 µg/m³ TWA: 50 µg/m³ excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (1/2)(250)/(%SiO_2 + 5) mppcf TWA respirable fraction : (1/2)(10)/(%SiO_2 + 2) mg/m³ TWA respirable fraction
ACETYLACETONE	123-54-6	5% - 10%	TWA: 25 ppm S*	N/A
XYLENE(PURE)	1330-20-7	1% - 5%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m³
TITANIUM DIOXIDE	13463-67-7	1% - 5%	TWA: 10 mg/m³	TWA: 15 mg/m³ total dust

QUARTZ CRYSTALLINE SILICA	14808-60-7	0% - 1%	TWA: 0.025 mg/m³ respirable particulate matter	TWA: 50 µg/m³ TWA: 50 µg/m³ excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO2 + 5) mppcf TWA respirable fraction : (10)/(%SiO2 + 2) mg/m³ TWA respirable fraction
ETHYLBENZENE	100-41-4	0% - 1%	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m³
NAPHTHA, PETROLEUM, HEAVY ALKYLATE	64741-65-7	0% - 1%	N/A	N/A

4. FIRST AID MEASURES

First Aid Measures

General advice Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye Contact Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin Contact Wash off immediately with plenty of water.

Inhalation Consult a physician if necessary. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Ingestion Do NOT induce vomiting.

Self-protection of the first aider Remove all sources of ignition.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific hazards arising from the chemical
Extremely flammable.

Explosion Data
Sensitivity to Mechanical Impact no data available.
Sensitivity to Static Discharge Yes.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment as required. Avoid breathing vapors or mists. Ventilate the area.

Environmental Precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use explosion-proof electrical (ventilation and lighting) equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep away from heat, sparks and flame.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH	OSHA	NIOSH IDLH
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m³	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m³
METHYL ACETATE 79-20-9	STEL: 250 ppm TWA: 200 ppm	TWA: 200 ppm TWA: 610 mg/m³	IDLH: 3100 ppm TWA: 200 ppm TWA: 610 mg/m³ STEL: 250 ppm STEL: 760 mg/m³
CRISTOBLITE CRYSTALLINE SILICA 14464-46-1	TWA: 0.025 mg/m³ respirable particulate matter	TWA: 50 µg/m³ TWA: 50 µg/m³ excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (1/2)(250)/(%SiO2 + 5) mppcf	IDLH: 25 mg/m³ respirable dust TWA: 0.05 mg/m³ respirable dust

		TWA respirable fraction : (1/2)(10)/(%SiO2 + 2) mg/m³ TWA respirable fraction	
ACETYLACETONE 123-54-6	TWA: 25 ppm S*	N/A	
CHROME ANTIMONY TITANIUM BUFF RUTILE 68186-90-3	TWA: 0.5 mg/m³ Sb TWA: 0.5 mg/m³ Cr	TWA: 0.5 mg/m³ Sb TWA: 0.5 mg/m³ Cr	IDLH: 50 mg/m³ Sb IDLH: 25 mg/m³ Cr(III) TWA: 0.5 mg/m³ Sb TWA: 0.5 mg/m³ Cr
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m³	
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m³	TWA: 15 mg/m³ total dust	IDLH: 5000 mg/m³
QUARTZ CRYSTALLINE SILICA 14808-60-7	TWA: 0.025 mg/m³ respirable particulate matter	TWA: 50 µg/m³ TWA: 50 µg/m³ excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO2 + 5) mppcf TWA respirable fraction : (10)/(%SiO2 + 2) mg/m³ TWA respirable fraction	IDLH: 50 mg/m³ respirable dust TWA: 0.05 mg/m³ respirable dust
ETHYLBENZENE 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m³	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m³ STEL: 125 ppm STEL: 545 mg/m³

NIOSH IDLH: Immediately Dangerous to Life or Health

Exposure controls

Engineering Measures Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Use personal protective equipment as required.

Skin and Body Protection Chemical resistant apron.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	**Appearance**	Opaque
Odor	Solvent.	**Odor Threshold**	No data available
pH	No data available	**Flash Point**	14 °F / -10 °C
Decomposition temperature	No data available	**Boiling Point**	133 °F / 56 °C
Melting Point / Melting Range	No data available	**Freezing Point**	No data available
Vapor Pressure @20°C (kPa)	No data available	**Partition coefficient:**	No data available
Vapor Density	No data available	**Density**	No data available
Bulk density	No data available	**Specific Gravity**	1.16
Evaporation Rate	No data available	**Water solubility**	No data available
Dynamic viscosity	No data available	**Weight per Gallon (lbs/gal):**	9.63
		Flammability Limits in Air	
		Upper	4.81 %
		Lower	0.85 %

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.
Conditions to Avoid
Extremes of temperature and direct sunlight.
Incompatible Materials
None known based on information supplied.
Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information The product has not been tested

Inhalation There is no data for this product.

Eye Contact There is no data for this product.

Skin Contact There is no data for this product.

Ingestion There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
METHYL AMYL KETONE 110-43-0	= 1600 mg/kg (Rat)	= 12.6 mL/kg (Rabbit)	2000 - 4000 ppm (Rat) 6 h
METHYL ACETATE 79-20-9	> 5 g/kg (Rat)	> 5 g/kg (Rabbit)	= 16000 ppm (Rat) 4 h
ACETYLACETONE 123-54-6	= 570 mg/kg (Rat) = 760 mg/kg (Rat)	= 1370 mg/kg (Rabbit) = 790 mg/kg (Rabbit)	= 1224 ppm (Rat) 4 h
CHROME ANTIMONY TITANIUM BUFF RUTILE 68186-90-3	> 10000 mg/kg (Rat)	N/A	N/A
XYLENE(PURE) 1330-20-7	= 3500 mg/kg (Rat)	> 4350 mg/kg (Rabbit)	= 29.08 mg/L (Rat) 4 h
TITANIUM DIOXIDE 13463-67-7	> 10000 mg/kg (Rat)	N/A	N/A
ETHYLBENZENE 100-41-4	= 3500 mg/kg (Rat)	= 15400 mg/kg (Rabbit)	= 17.4 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
MUTAGENIC EFFECTS No information available.
Carcinogenicity This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
CRISTOBLITE CRYSTALLINE SILICA	A2	Group 1	Known	X

14464-46-1				
DIATOMACEOUS EARTH, FLUX CALCINED 68855-54-9	N/A	Group 3	N/A	N/A
CHROME ANTIMONY TITANIUM BUFF RUTILE 68186-90-3	N/A	Group 3	N/A	N/A
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
QUARTZ CRYSTALLINE SILICA 14808-60-7	A2	Group 1	Known	X
ETHYLBENZENE 100-41-4	A3	Group 2B	N/A	X

Legend:

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
Group 3 - Not Classifiable as to Carcinogenicity in Humans
NTP (National Toxicology Program)
Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Reproductive Toxicity No information available.
Specific target organ systemic toxicity (single exposure) No information available.
Specific target organ systemic toxicity (repeated exposure) No information available.
Target Organ Effects Central nervous system (CNS), Central Vascular System (CVS), Eyes, Lungs, Peripheral Nervous System (PNS), Respiratory system, Skin.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 1819 mg/kg
ATEmix (dermal) 4028 mg/kg
ATEmix (inhalation-dust/mist) 3.5 mg/l
Oral LD50 3466 mg/kg (rat) Estimated
Dermal LD50 8511 mg/kg (rat) Estimated
Inhalation LC50 206853 mg/l (mist) (dust) mg/m³ Estimated
Inhalation LC50

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
METHYL ACETATE 79-20-9	120: 72 h Desmodesmus subspicatus mg/L EC50	250 - 350: 96 h Brachydanio rerio mg/L LC50 static 295 - 348: 96 h Pimephales promelas mg/L LC50 flow-through	1026.7: 48 h Daphnia magna mg/L EC50
ACETYLACETONE 123-54-6	N/A	50.3 - 71.8: 96 h Lepomis macrochirus mg/L LC50 flow-through 64.1 - 80.1: 96 h Oncorhynchus mykiss mg/L LC50	34.4: 48 h Daphnia magna mg/L EC50

		flow-through 98.3 - 110: 96 h Pimephales promelas mg/L LC50 flow-through	
XYLENE(PURE) 1330-20-7	N/A	13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50	0.6: 48 h Gammarus lacustris mg/L LC50 3.82: 48 h water flea mg/L EC50
ETHYLBENZENE 100-41-4	1.7 - 7.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 2.6 - 11.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 4.6: 72 h Pseudokirchneriella subcapitata mg/L EC50 438: 96 h Pseudokirchneriella subcapitata mg/L EC50	11.0 - 18.0: 96 h Oncorhynchus mykiss mg/L LC50 static 7.55 - 11: 96 h Pimephales promelas mg/L LC50 flow-through 9.1 - 15.6: 96 h Pimephales promelas mg/L LC50 static 32: 96 h Lepomis macrochirus mg/L LC50 static 4.2: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 9.6: 96 h Poecilia reticulata mg/L LC50 static	1.8 - 2.4: 48 h Daphnia magna mg/L EC50

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Chemical Name	Partition coefficient
METHYL AMYL KETONE 110-43-0	1.98
METHYL ACETATE 79-20-9	0.18
ACETYLACETONE 123-54-6	0.34
XYLENE(PURE) 1330-20-7	3.15
ETHYLBENZENE 100-41-4	3.2

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste treatment methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

US EPA Waste Number D001

Chemical Name	RCRA - Basis for Listing	RCRA - D Series Wastes
XYLENE(PURE) 1330-20-7	Included in waste stream: F039	N/A
ETHYLBENZENE 100-41-4	Included in waste stream: F039	N/A

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
METHYL ACETATE 79-20-9	Toxic Ignitable
CHROME ANTIMONY TITANIUM BUFF RUTILE 68186-90-3	Toxic Corrosive Ignitable
XYLENE(PURE) 1330-20-7	Toxic Ignitable
ETHYLBENZENE 100-41-4	Toxic Ignitable

14. TRANSPORT INFORMATION

DOT

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	149, B52, IB2, T4, TP1, TP8, TP28
Description	UN1263, Paint, 3, II, RQ
Emergency Response Guide Number	128

TDG

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

MEX

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

ICAO

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

IATA

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

IMDG/IMO

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E

Special Provisions	163, 367

RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, 3, II

ADR/RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, 3, II, (D/E)
ADR/RID-Labels	3

ADN

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, 3, II
Hazard Labels	3
Limited Quantity (LQ)	5 L
Ventilation	VE01

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
CHROME ANTIMONY TITANIUM BUFF RUTILE	68186-90-3	1.0
XYLENE(PURE)	1330-20-7	1.0

ETHYLBENZENE	100-41-4	0.1

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CAA (Clean Air Act)

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
CHROME ANTIMONY TITANIUM BUFF RUTILE	68186-90-3	Present
XYLENE(PURE)	1330-20-7	Present
ETHYLBENZENE	100-41-4	Present

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
CHROME ANTIMONY TITANIUM BUFF RUTILE	N/A	X	N/A	N/A
XYLENE(PURE)	100 lb	N/A	N/A	X
ETHYLBENZENE	1000 lb	X	X	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ
ETHYLBENZENE	1000 lb	N/A	RQ 1000 lb final RQ RQ 454 kg final RQ

State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
CRISTOBLITE CRYSTALLINE SILICA	14464-46-1	Carcinogen
TITANIUM DIOXIDE	13463-67-7	Carcinogen
QUARTZ CRYSTALLINE SILICA	14808-60-7	Carcinogen
ETHYLBENZENE	100-41-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
METHYL AMYL KETONE	X	X	X	N/A	X
METHYL ACETATE	X	X	X	N/A	X
CRISTOBLITE CRYSTALLINE SILICA	X	X	X	X	N/A
ACETYLACETONE	X	X	X	N/A	N/A
CHROME ANTIMONY TITANIUM BUFF RUTILE	N/A	X	X	X	N/A
XYLENE(PURE)	X	X	X	X	X
TITANIUM DIOXIDE	X	X	X	N/A	X

QUARTZ CRYSTALLINE SILICA	X	X	X	X	X
ETHYLBENZENE	X	X	X	X	X

International Regulations

Mexico - Grade Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm Mexico: TWA 235 mg/m³ Mexico: STEL 100 ppm Mexico: STEL 465 mg/m³
METHYL ACETATE	N/A	Mexico: TWA 200 ppm Mexico: TWA 610 mg/m³ Mexico: STEL 250 ppm Mexico: STEL 760 mg/m³
CRISTOBLITE CRYSTALLINE SILICA	N/A	Mexico: TWA 0.05 mg/m³
CHROME ANTIMONY TITANIUM BUFF RUTILE	N/A	Mexico: TWA 0.5 mg/m³
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m³ Mexico: STEL 150 ppm Mexico: STEL 655 mg/m³
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m³ Mexico: STEL 20 mg/m³
QUARTZ CRYSTALLINE SILICA	N/A	Mexico: TWA 0.1 mg/m³
ETHYLBENZENE	N/A	Mexico: TWA 100 ppm Mexico: TWA 435 mg/m³ Mexico: STEL 125 ppm Mexico: STEL 545 mg/m³

16. OTHER INFORMATION

NFPA **Health Hazard** 2 **Flammability** 3 **Instability** 0 **Physical and Chemical Hazards** -

NFPA Rating

HMIS **Health Hazard** 2 * **Flammability** 3 **Physical Hazard** 0 **Personal protection** X

Chronic Hazard Star Legend ** Chronic Health Hazard*

Issuing Date: 22-Dec-2011
Revision Date: 06-Mar-2019
Revision Note
No information available

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other

materials or in any process, unless specified in the text. 31361YPX-T1

end

SAFETY DATA SHEET

F93N2038 1150521

CRP25285
SF93N2038A

Section 1. Identification

Product name : F93 Series - Lusterless 85285
BROWN 30117

Product code : F93N2038 1150521

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

Emergency telephone number of the company : (216) 566-2917

Product Information Telephone Number : Not available.

Regulatory Information Telephone Number : (216) 566-2902

Transportation Emergency Telephone Number : (800) 424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (oral) - Category 4
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION (Fertility) - Category 1B
TOXIC TO REPRODUCTION (Unborn child) - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 2%

GHS label elements

Hazard pictograms :

Signal word : Danger

Section 2. Hazards identification

Hazard statements : Flammable liquid and vapor.
Harmful if swallowed.
May cause cancer.
May damage fertility or the unborn child.
May cause respiratory irritation.
May cause drowsiness and dizziness.
Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY. Adequate ventilation required when sanding or abrading the dried film. If Adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH approved). Follow respirator manufacturer's directions for respirator use. DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Abrading or sanding of the dry film may release Crystalline Silica which has been shown to cause lung damage and cancer under long term exposure.

Please refer to the SDS for additional information. Do not transfer contents to other containers for storage.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Methyl n-Amyl Ketone	≥25 - <50	110-43-0
p-Chlorobenzotrifluoride	≥5 - <5.6	98-56-6
2,4-Pentanedione	≥3 - <4	123-54-6
Titanium Dioxide	≥3 - <5	13463-67-7
Quartz	≥1 - <3	14808-60-7
Carbon Black	≥0.1 - <0.3	1333-86-4
Dibutyltin Dilaurate	≥0.1 - <0.3	77-58-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.

Skin contact : No known significant effects or critical hazards.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First aid measures

Skin contact : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
carbonyl halides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Methyl n-Amyl Ketone	**ACGIH TLV (United States, 3/2015).** TWA: 50 ppm 8 hours. TWA: 233 mg/m³ 8 hours. **NIOSH REL (United States, 10/2013).** TWA: 100 ppm 10 hours. TWA: 465 mg/m³ 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 100 ppm 8 hours. TWA: 465 mg/m³ 8 hours.
p-Chlorobenzotrifluoride	None.
2,4-Pentanedione	**ACGIH TLV (United States, 3/2015).** **Absorbed through skin.** TWA: 25 ppm 8 hours.
Titanium Dioxide	**ACGIH TLV (United States, 3/2015).** TWA: 10 mg/m³ 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 15 mg/m³ 8 hours. Form: Total dust
Quartz	**OSHA PEL Z3 (United States, 2/2013).** TWA: 250 MPPCF / (%SiO2+5) 8 hours. Form: Respirable TWA: 10 MG/M3 / (%SiO2+2) 8 hours. Form: Respirable **ACGIH TLV (United States, 3/2015).** TWA: 0.025 mg/m³ 8 hours. Form: Respirable fraction **NIOSH REL (United States, 10/2013).** TWA: 0.05 mg/m³ 10 hours. Form: respirable dust
Carbon Black	**NIOSH REL (United States, 10/2013).** TWA: 3.5 mg/m³ 10 hours. TWA: 0.1 mg of PAHs/cm³ 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 3.5 mg/m³ 8 hours. **ACGIH TLV (United States, 3/2015).** TWA: 3 mg/m³ 8 hours. Form: Inhalable fraction
Dibutyltin Dilaurate	**ACGIH TLV (United States, 3/2015).** **Absorbed through skin.** TWA: 0.1 mg/m³, (as Sn) 8 hours. STEL: 0.2 mg/m³, (as Sn) 15 minutes. **NIOSH REL (United States, 10/2013).** **Absorbed through skin.** TWA: 0.1 mg/m³, (as Sn) 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 0.1 mg/m³, (as Sn) 8 hours.

Section 8. Exposure controls/personal protection

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Various

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : 138°C (280.4°F)

Flash point : Closed cup: 39°C (102.2°F) [Pensky-Martens Closed Cup]

Evaporation rate : 0.75 (butyl acetate = 1)

Flammability (solid, gas) : Not available.

Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits	:	Lower: 0.9% Upper: 13.1%
Vapor pressure	:	0 kPa (0 mm Hg) [at 20°C]
Vapor density	:	3.5 [Air = 1]
Relative density	:	1.17
Solubility	:	Not available.
Partition coefficient: n-octanol/water	:	Not available.
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
Viscosity	:	Kinematic (40°C (104°F)): >0.205 cm^2/s (>20.5 cSt)
Molecular weight	:	Not applicable.

Aerosol product

Heat of combustion	:	19.85 kJ/g

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	:	Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Methyl n-Amyl Ketone	LD50 Oral	Rat	1600 mg/kg	-
p-Chlorobenzotrifluoride	LD50 Oral	Rat	13 g/kg	-
2,4-Pentanedione	LD50 Oral	Rat	55 mg/kg	-
Carbon Black	LD50 Oral	Rat	>15400 mg/kg	-
Dibutyltin Dilaurate	LD50 Oral	Rat	175 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Methyl n-Amyl Ketone	Skin - Mild irritant	Rabbit	-	24 hours 14 milligrams	-
2,4-Pentanedione	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Skin - Mild irritant	Rabbit	-	488 milligrams	-
	Skin - Mild irritant	Rabbit	-	6 hours 11.2 Mililiters Intermittent	-
	Skin - Moderate irritant	Rabbit	-	48 hours 11.2 Mililiters Intermittent	-
	Skin - Moderate irritant	Rabbit	-	6 hours 33.6 Mililiters Intermittent	-
Titanium Dioxide	Skin - Mild irritant	Human	-	72 hours 300 Micrograms Intermittent	-
Dibutyltin Dilaurate	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Titanium Dioxide	-	2B	-
Quartz	-	1	Known to be a human carcinogen.
Carbon Black	-	2B	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Methyl n-Amyl Ketone	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
p-Chlorobenzotrifluoride	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
2,4-Pentanedione	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Methyl n-Amyl Ketone	Category 2	Not determined	Not determined
p-Chlorobenzotrifluoride	Category 2	Not determined	Not determined
2,4-Pentanedione	Category 2	Not determined	Not determined
Quartz	Category 1	Inhalation	Not determined

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.

Skin contact : No known significant effects or critical hazards.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Causes damage to organs through prolonged or repeated exposure.
Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : May damage the unborn child.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : May damage fertility.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	1134.5 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Methyl n-Amyl Ketone	Acute LC50 131000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
2,4-Pentanedione	Acute EC50 75000 µg/l Fresh water	Crustaceans - Ceriodaphnia reticulata - Larvae	48 hours
	Acute LC50 47600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 60100 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
Titanium Dioxide	Acute LC50 >1000000 µg/l Marine water	Fish - Fundulus heteroclitus	96 hours
Dibutyltin Dilaurate	Chronic EC10 >2 mg/l Fresh water	Algae - Scenedesmus subspicatus	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Methyl n-Amyl Ketone	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Titanium Dioxide	-	352	low
Dibutyltin Dilaurate	-	2.91	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a

Section 13. Disposal considerations

safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	III	III	III	III	III
Environmental hazards	No.	No.	No.	No.	No.
Additional information	This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity. **Special provisions** Not Applicable **ERG No.** 128	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2. 18-2.19 (Class 3). **Special provisions** Not Applicable **ERG No.** 128	**Special provisions** (ERG#128) **ERG No.** 128	**Special provisions** Not Applicable	**Emergency schedules (EmS)** F-E, S-E

Section 14. Transport information

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Proper shipping name : Not available.

Ship type : Not available.

Pollution category : Not available.

Section 15. Regulatory information

TSCA 5(a)2 proposed significant new use rules: 2,4-Pentanedione

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		2
Physical hazards		0

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

Procedure used to derive the classification

Classification	Justification
Flam. Liq. 3, H226	On basis of test data
Acute Tox. 4, H302	Calculation method
Carc. 1A, H350	Calculation method
Repr. 1B, H360 (Fertility)	Calculation method
Repr. 1B, H360 (Unborn child)	Calculation method
STOT SE 3, H335	Calculation method
STOT SE 3, H336	Calculation method
STOT RE 1, H372	Calculation method

History

Date of printing : 2/10/2016

Date of issue/Date of revision : 2/10/2016

Section 16. Other information

Date of previous issue : No previous validation

Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by Sherwin-Williams, including but not limited to the incorporation of non Sherwin-Williams products or the use or addition of products in proportions not specified by Sherwin-Williams. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

SAFETY DATA SHEET

V93V26

Section 1. Identification

Product name : MIL-PRF-85285E, Type I, Class H, Component B, Lusterless Curing Agent Component B

Product code : V93V26

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
101 W. Prospect Avenue
Cleveland, OH 44115

Emergency telephone number of the company : US / Canada: (800) 424-9300
Mexico: SETIQ 01-800-00-214-00 / (52) 55-5559-1588 24 hours / 365 days a year

Product Information Telephone Number : US / Canada: 888-888-5593
Mexico: Not Available

Regulatory Information Telephone Number : US / Canada: (216) 566-2902
Mexico: Not Available

Transportation Emergency Telephone Number : US / Canada: (800) 424-9300
Mexico: SETIQ 01-800-00-214-00 / (52) 55-5559-1588 24 hours / 365 days a year

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 4%

Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 4%

GHS label elements

Hazard pictograms :

Section 2. Hazards identification

Signal word : Warning

Hazard statements : Flammable liquid and vapor.
Harmful if inhaled.
Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
Suspected of causing cancer.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY. This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS. VAPOR AND SPRAY MIST HARMFUL. Gives off harmful vapor of solvents and isocyanates. DO NOT USE IF YOU HAVE CHRONIC (LONG-TERM) LUNG OR BREATHING PROBLEMS, OR IF YOU HAVE EVER HAD A REACTION TO ISOCYANATES. USE ONLY WITH ADEQUATE VENTILATION. WHERE OVERSPRAY IS PRESENT, A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR (NIOSH approved) SHOULD BE WORN TO PREVENT EXPOSURE. IF UNAVAILABLE, AN APPROPRIATE PROPERLY FITTED APPROVED NIOSH VAPOR/PARTICULATE RESPIRATOR MAY BE EFFECTIVE. Follow directions for respirator use. Wear the respirator for the whole time of spraying and until all vapors and mists are gone. If you have any breathing problems during use, LEAVE THE AREA and get fresh air. If problems remain or happen later, IMMEDIATELY call a doctor - If not available get emergency medical treatment. Have this label with you. Reacts with water in closed container to produce pressure which may cause container to burst.

Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Hexamethylene Diisocyanate Polymer	≥75 - ≤90	28182-81-2
n-Butyl Acetate	≤5	123-86-4
Ethyl Acetate	≤5	141-78-6
1,2,4-Trimethylbenzene	≤2.7	95-63-6
Light Aromatic Hydrocarbons	≤2.8	64742-95-6
1,3,5-Trimethylbenzene	<1	108-67-8
Cumene	≤0.3	98-82-8
1,2,3-Trimethylbenzene	≤0.3	526-73-8
Xylene, mixed isomers	≤0.3	1330-20-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Section 4. First aid measures

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Ingredient name	CAS #	Exposure limits
Hexamethylene Diisocyanate Polymer	28182-81-2	None.
n-Butyl Acetate	123-86-4	**NIOSH REL (United States, 10/2016).** TWA: 150 ppm 10 hours. TWA: 710 mg/m³ 10 hours. STEL: 200 ppm 15 minutes. STEL: 950 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 150 ppm 8 hours. TWA: 710 mg/m³ 8 hours. **ACGIH TLV (United States, 3/2019).** STEL: 150 ppm 15 minutes. TWA: 50 ppm 8 hours.
Ethyl Acetate	141-78-6	**ACGIH TLV (United States, 3/2019).** TWA: 400 ppm 8 hours. TWA: 1440 mg/m³ 8 hours. **NIOSH REL (United States, 10/2016).** TWA: 400 ppm 10 hours. TWA: 1400 mg/m³ 10 hours. **OSHA PEL (United States, 5/2018).** TWA: 400 ppm 8 hours. TWA: 1400 mg/m³ 8 hours.
1,2,4-Trimethylbenzene	95-63-6	**ACGIH TLV (United States, 3/2019).** TWA: 25 ppm 8 hours. TWA: 123 mg/m³ 8 hours. **NIOSH REL (United States, 10/2016).** TWA: 25 ppm 10 hours. TWA: 125 mg/m³ 10 hours.
Light Aromatic Hydrocarbons	64742-95-6	None.
1,3,5-Trimethylbenzene	108-67-8	**ACGIH TLV (United States, 3/2019).** TWA: 25 ppm 8 hours. TWA: 123 mg/m³ 8 hours. **NIOSH REL (United States, 10/2016).** TWA: 25 ppm 10 hours. TWA: 125 mg/m³ 10 hours.
Cumene	98-82-8	**ACGIH TLV (United States, 3/2019).** TWA: 50 ppm 8 hours. **NIOSH REL (United States, 10/2016).** **Absorbed through skin.** TWA: 50 ppm 10 hours. TWA: 245 mg/m³ 10 hours. **OSHA PEL (United States, 5/2018).** **Absorbed through skin.** TWA: 50 ppm 8 hours.

		TWA: 245 mg/m³ 8 hours.
1,2,3-Trimethylbenzene	526-73-8	**ACGIH TLV (United States, 3/2019).** TWA: 25 ppm 8 hours. TWA: 123 mg/m³ 8 hours. **NIOSH REL (United States, 10/2016).** TWA: 25 ppm 10 hours. TWA: 125 mg/m³ 10 hours.
Xylene, mixed isomers	1330-20-7	**ACGIH TLV (United States, 3/2019).** TWA: 100 ppm 8 hours. TWA: 434 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.

Occupational exposure limits (Canada)

Ingredient name	CAS #	Exposure limits
Normal butyl acetate	123-86-4	**CA Alberta Provincial (Canada, 6/2018).** 15 min OEL: 200 ppm 15 minutes. 15 min OEL: 950 mg/m³ 15 minutes. 8 hrs OEL: 150 ppm 8 hours. 8 hrs OEL: 713 mg/m³ 8 hours. **CA British Columbia Provincial (Canada, 5/2019).** TWA: 20 ppm 8 hours. **CA Ontario Provincial (Canada, 1/2018).** TWA: 150 ppm 8 hours. STEL: 200 ppm 15 minutes. **CA Quebec Provincial (Canada, 1/2014).** TWAEV: 150 ppm 8 hours. TWAEV: 713 mg/m³ 8 hours. STEV: 200 ppm 15 minutes. STEV: 950 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 200 ppm 15 minutes. TWA: 150 ppm 8 hours.
1,2,4-Trimethylbenzene	95-63-6	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 123 mg/m³ 8 hours. 8 hrs OEL: 25 ppm 8 hours. **CA British Columbia Provincial (Canada, 5/2019).** TWA: 25 ppm 8 hours. **CA Quebec Provincial (Canada, 1/2014).** TWAEV: 25 ppm 8 hours. TWAEV: 123 mg/m³ 8 hours. **CA Ontario Provincial (Canada, 1/2018).** TWA: 25 ppm 8 hours. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 30 ppm 15 minutes. TWA: 25 ppm 8 hours.
Cumene	98-82-8	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 50 ppm 8 hours.

		8 hrs OEL: 246 mg/m³ 8 hours. **CA British Columbia Provincial (Canada, 5/2019).** TWA: 25 ppm 8 hours. STEL: 75 ppm 15 minutes. **CA Ontario Provincial (Canada, 1/2018).** TWA: 50 ppm 8 hours. **CA Quebec Provincial (Canada, 1/2014).** TWAEV: 50 ppm 8 hours. TWAEV: 246 mg/m³ 8 hours. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 74 ppm 15 minutes. TWA: 50 ppm 8 hours.
Xylene	1330-20-7	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 100 ppm 8 hours. 15 min OEL: 651 mg/m³ 15 minutes. 15 min OEL: 150 ppm 15 minutes. 8 hrs OEL: 434 mg/m³ 8 hours. **CA British Columbia Provincial (Canada, 5/2019).** TWA: 100 ppm 8 hours. STEL: 150 ppm 15 minutes. **CA Quebec Provincial (Canada, 1/2014).** TWAEV: 100 ppm 8 hours. TWAEV: 434 mg/m³ 8 hours. STEV: 150 ppm 15 minutes. STEV: 651 mg/m³ 15 minutes. **CA Ontario Provincial (Canada, 1/2018).** STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours.

Occupational exposure limits (Mexico)

	CAS #	Exposure limits
n-Butyl Acetate	123-86-4	**NOM-010-STPS-2014 (Mexico, 4/2016).** TWA: 150 ppm 8 hours. STEL: 200 ppm 15 minutes.
Ethyl Acetate	141-78-6	**NOM-010-STPS-2014 (Mexico, 4/2016).** TWA: 400 ppm 8 hours.
1,2,4-Trimethylbenzene	95-63-6	**NOM-010-STPS-2014 (Mexico, 4/2016).** TWA: 25 ppm 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 8. Exposure controls/personal protection

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Boiling point/boiling range : 72°C (161.6°F)

Flash point : Closed cup: 34°C (93.2°F) [Pensky-Martens Closed Cup]

Evaporation rate : 3.91 (butyl acetate = 1)

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Lower: 0.7%
Upper: 10.7%

Vapor pressure : 11.5 kPa (86 mm Hg) [at 20°C]

Vapor density : 3.04 [Air = 1]

Relative density : 1.12

Solubility : Not available.

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Kinematic (40°C (104°F)): >0.205 cm^2/s (>20.5 cSt)

Molecular weight : Not applicable.

Aerosol product

Heat of combustion : 4.778 kJ/g

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hexamethylene Diisocyanate Polymer	LC50 Inhalation Vapor	Rat	18500 mg/m³	1 hours
n-Butyl Acetate	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10768 mg/kg	-
Ethyl Acetate	LD50 Oral	Rat	5620 mg/kg	-
1,2,4-Trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m³	4 hours
	LD50 Oral	Rat	5 g/kg	-
Light Aromatic Hydrocarbons	LD50 Oral	Rat	8400 mg/kg	-
1,3,5-Trimethylbenzene	LC50 Inhalation Vapor	Rat	24000 mg/m³	4 hours
	LD50 Oral	Rat	5000 mg/kg	-
Cumene	LC50 Inhalation Vapor	Rat	39000 mg/m³	4 hours
	LD50 Oral	Rat	1400 mg/kg	-
Xylene, mixed isomers	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Hexamethylene Diisocyanate Polymer	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-
n-Butyl Acetate	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
Light Aromatic Hydrocarbons	Eyes - Mild irritant	Rabbit	-	24 hours 100 Ul	-
1,3,5-Trimethylbenzene	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
Cumene	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Mild irritant	Rabbit	-	86 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 10 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 100 mg	-
Xylene, mixed isomers	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 Ul	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	100 %	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Cumene	-	2B	Reasonably anticipated to be a human carcinogen.
Xylene, mixed isomers	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Hexamethylene Diisocyanate Polymer	Category 3	Not applicable.	Respiratory tract irritation
n-Butyl Acetate	Category 3	Not applicable.	Narcotic effects
Ethyl Acetate	Category 3	Not applicable.	Narcotic effects
1,2,4-Trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
Light Aromatic Hydrocarbons	Category 3	Not applicable.	Narcotic effects
	Category 3	Not applicable.	Respiratory tract irritation
1,3,5-Trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
Cumene	Category 3	Not applicable.	Narcotic effects
	Category 3	Not applicable.	Respiratory tract irritation
1,2,3-Trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
Xylene, mixed isomers	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Light Aromatic Hydrocarbons	Category 2	Not determined	Not determined
Cumene	Category 2	Not determined	Not determined
Xylene, mixed isomers	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
1,2,4-Trimethylbenzene	ASPIRATION HAZARD - Category 1
Light Aromatic Hydrocarbons	ASPIRATION HAZARD - Category 1
1,3,5-Trimethylbenzene	ASPIRATION HAZARD - Category 1
Cumene	ASPIRATION HAZARD - Category 1
1,2,3-Trimethylbenzene	ASPIRATION HAZARD - Category 1
Xylene, mixed isomers	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Section 11. Toxicological information

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (vapors)	12.55 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
n-Butyl Acetate	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 18000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Ethyl Acetate	Acute EC50 2500000 µg/l Fresh water	Algae - Selenastrum sp.	96 hours
	Acute LC50 750000 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 154000 µg/l Fresh water	Daphnia - Daphnia cucullata	48 hours
	Acute LC50 212500 µg/l Fresh water	Fish - Heteropneustes fossilis	96 hours
	Chronic NOEC 2400 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 75.6 mg/l Fresh water	Fish - Pimephales promelas - Embryo	32 days
1,2,4-Trimethylbenzene	Acute LC50 4910 µg/l Marine water	Crustaceans - Elasmopus pectenicrus - Adult	48 hours
	Acute LC50 7720 µg/l Fresh water	Fish - Pimephales promelas	96 hours
1,3,5-Trimethylbenzene	Acute LC50 13000 µg/l Marine water	Crustaceans - Cancer magister -	48 hours

Section 12. Ecological information

		Zoea	
	Acute LC50 12520 µg/l Fresh water	Fish - Carassius auratus	96 hours
	Chronic NOEC 400 µg/l Fresh water	Daphnia - Daphnia magna	21 days
Cumene	Acute EC50 2600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 7.4 mg/l Marine water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 10.6 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2700 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Xylene, mixed isomers	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
n-Butyl Acetate	-	-	Readily
Ethyl Acetate	-	-	Readily
Light Aromatic Hydrocarbons	-	-	Readily
Xylene, mixed isomers	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Hexamethylene Diisocyanate Polymer	-	367.7	low
Ethyl Acetate	-	30	low
1,2,4-Trimethylbenzene	-	243	low
Light Aromatic Hydrocarbons	-	10 to 2500	high
1,3,5-Trimethylbenzene	-	161	low
Cumene	-	35.48	low
1,2,3-Trimethylbenzene	-	194.98	low
Xylene, mixed isomers	-	8.1 to 25.9	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact

Section 13. Disposal considerations

with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	III	III	III	III	III
Environmental hazards	No.	No.	No.	No.	No.
Additional information	- **ERG No.** 128	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3). **ERG No.** 128	- **ERG No.** 128	-	**Emergency schedules** F-E, S-E

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Proper shipping name : Not available.
Ship type : Not available.
Pollution category : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

International regulations

International lists : **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	3
Flammability		3
Physical hazards		0

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 3	On basis of test data
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
CARCINOGENICITY - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method

History

Date of printing : 2/10/2020

Date of issue/Date of revision : 2/10/2020

Date of previous issue : 11/28/2019

Version : 11

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

SAFETY DATA SHEET

Issuing Date: 19-Nov-2020 **Revision Date:** 27-Nov-2020 **Print Date:** 27-Nov-2020

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: 31105KPX

Product Name: 37038 BLACK 3.5 VOC URETHANE MIL-PRF-85285E,TYPE I,CLASS H,PART A

Hentzen Coatings, Inc.
6937 West Mill Road, Milwaukee, WI 53218-1225
Company Phone Number: 1-414-353-4200
Emergency telephone number ChemTrec 1-800-424-9300
Recommended use of the chemical and restrictions on use Industrial paint (Paint or Paint-Related), Restricted to professional users

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Carcinogenicity	Category 1A
Flammable Liquids	Category 2

Label Elements

Emergency Overview

DANGER

Hazard Statements
Harmful if swallowed
May cause cancer
Highly flammable liquid and vapor

Appearance Opaque **Physical state** Liquid **Odor** Solvent

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/Bond container and receiving equipment
Use explosion-proof electrical/ ventilating/ lighting/ equipment
Use only non-sparking tools
Take precautionary measures against static discharge

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
In case of fire: Use CO_2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool
Store in accordance with local regulations

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other information
- May be harmful in contact with skin
- Harmful to aquatic life with long lasting effects
- Harmful to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Contains a known or suspected carcinogen

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
2-ETHYL HEXYL ACETATE	103-09-3	20% - 30%	N/A	N/A
SYNTHETIC AMORPHOUS SILICA (PRECIPITATED)	112926-00-8	5% - 10%	N/A	TWA: 20 mppcf : (80)/(% SiO_2) mg/m³ TWA
METHYL AMYL KETONE	110-43-0	5% - 10%	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m³
ACETYLACETONE	123-54-6	5% - 10%	TWA: 25 ppm S*	N/A
BUTYL ACETATE	123-86-4	1% - 5%	STEL: 150 ppm TWA: 50 ppm	TWA: 150 ppm TWA: 710 mg/m³
CARBON BLACK	1333-86-4	1% - 5%	TWA: 3 mg/m³ inhalable particulate matter	TWA: 3.5 mg/m³
SYNTHETIC AMORPHOUS SILICA	112945-52-5	0% - 1%	N/A	N/A
CRYSTALLINE SILICA(QUARTZ)	14808-60-7	0% - 1%	TWA: 0.025 mg/m³ respirable particulate matter	TWA: 50 µg/m³ TWA: 50 µg/m³ excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO_2 + 5) mppcf TWA respirable fraction : (10)/(%SiO_2 + 2) mg/m³ TWA respirable fraction
TITANIUM DIOXIDE	13463-67-7	0% - 1%	TWA: 10 mg/m³	TWA: 15 mg/m³ total dust
TITANIUM DIOXIDE	13463-67-7	0% - 1%	TWA: 10 mg/m³	TWA: 15 mg/m³ total dust
XYLENE(PURE)	1330-20-7	0% - 1%	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m³

4. FIRST AID MEASURES

First Aid Measures

General advice Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye Contact Immediately flush eyes with water for at least 15 minutes. Get medical attention. If easy to do, remove contact lenses. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin Contact Wash off immediately with plenty of water.

Inhalation Consult a physician if necessary. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Ingestion Do NOT induce vomiting.

Self-protection of the first aider Remove all sources of ignition.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific hazards arising from the chemical
Flammable.

Explosion Data
Sensitivity to Mechanical Impact no data available.
Sensitivity to Static Discharge Yes.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Evacuate personnel to safe areas. Ensure adequate ventilation. Remove all sources of ignition. Use personal protective equipment as required. Avoid breathing vapors or mists. Ventilate the area.

Environmental Precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use explosion-proof electrical (ventilation and lighting) equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep away from heat, sparks and flame.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Chemical Name	ACGIH	OSHA	NIOSH IDLH
TERTIARY BUTYL ACETATE 540-88-5	STEL: 150 ppm TWA: 50 ppm	TWA: 200 ppm TWA: 950 mg/m³	IDLH: 1500 ppm TWA: 200 ppm TWA: 950 mg/m³
MICA (POTASSIUM ALUMINUM SILICATE) 12001-26-2	TWA: 3 mg/m³ respirable particulate matter	TWA: 20 mppcf <1% Crystalline silica	IDLH: 1500 mg/m³ TWA: 3 mg/m³ containing <1% Quartz respirable dust
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm	TWA: 100 ppm TWA: 465 mg/m³	IDLH: 800 ppm TWA: 100 ppm TWA: 465 mg/m³
ACETYLACETONE 123-54-6	TWA: 25 ppm S*	N/A	
BUTYL ACETATE 123-86-4	STEL: 150 ppm TWA: 50 ppm	TWA: 150 ppm TWA: 710 mg/m³	IDLH: 1700 ppm TWA: 150 ppm TWA: 710 mg/m³ STEL: 200 ppm STEL: 950 mg/m³
CARBON BLACK 1333-86-4	TWA: 3 mg/m³ inhalable particulate matter	TWA: 3.5 mg/m³	IDLH: 1750 mg/m³ TWA: 3.5 mg/m³ TWA: 0.1 mg/m³ Carbon black in presence of Polycyclic aromatic hydrocarbons PAH
CRYSTALLINE SILICA(QUARTZ) 14808-60-7	TWA: 0.025 mg/m³ respirable particulate matter	TWA: 50 µg/m³ TWA: 50 µg/m³ excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays : (250)/(%SiO2 + 5) mppcf TWA respirable fraction : (10)/(%SiO2 + 2) mg/m³ TWA respirable fraction	IDLH: 50 mg/m³ respirable dust TWA: 0.05 mg/m³ respirable dust
TITANIUM DIOXIDE	TWA: 10 mg/m³	TWA: 15 mg/m³ total dust	IDLH: 5000 mg/m³

13463-67-7			TWA: 2.4 mg/m³ CIB 63 fine TWA: 0.3 mg/m³ CIB 63 ultrafine, including engineered nanoscale
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m³	TWA: 15 mg/m³ total dust	IDLH: 5000 mg/m³ TWA: 2.4 mg/m³ CIB 63 fine TWA: 0.3 mg/m³ CIB 63 ultrafine, including engineered nanoscale
XYLENE(PURE) 1330-20-7	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m³	

NIOSH IDLH: Immediately Dangerous to Life or Health

Exposure controls

Engineering Measures Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Use personal protective equipment as required.

Skin and Body Protection Chemical resistant apron.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	**Appearance**	Opaque
Odor	Solvent.	**Odor Threshold**	No data available
pH	No data available	**Flash Point**	40 °F / 4 °C
Decomposition temperature	No data available	**Boiling Point**	208 °F / 98 °C
Melting Point / Melting Range	No data available	**Freezing Point**	No data available
Vapor Pressure @20°C (kPa)	No data available	**Partition coefficient:**	No data available
Vapor Density	No data available	**Density**	No data available
Bulk density	No data available	**Specific Gravity**	1.07
Evaporation Rate	No data available	**Water solubility**	No data available
Dynamic viscosity	No data available	**Weight per Gallon (lbs/gal):**	8.89
		Flammability Limits in Air	
		Upper	0.01 %
		Lower	0 %

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.
Conditions to Avoid
Extremes of temperature and direct sunlight.
Incompatible Materials
None known based on information supplied.
Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information The product has not been tested

Inhalation There is no data for this product.

Eye Contact There is no data for this product.

Skin Contact There is no data for this product.

Ingestion There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
TERTIARY BUTYL ACETATE 540-88-5	= 4100 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 9482 mg/m³ (Rat) 4 h
METHYL AMYL KETONE 110-43-0	= 1600 mg/kg (Rat)	= 12.6 mL/kg (Rabbit)	2000 - 4000 ppm (Rat) 6 h
ACETYLACETONE 123-54-6	= 570 mg/kg (Rat) = 760 mg/kg (Rat)	= 1370 mg/kg (Rabbit) = 790 mg/kg (Rabbit)	= 1224 ppm (Rat) 4 h
BUTYL ACETATE 123-86-4	= 10768 mg/kg (Rat)	> 17600 mg/kg (Rabbit)	= 0.74 mg/L (Rat) 4 h
CARBON BLACK 1333-86-4	> 15400 mg/kg (Rat)	N/A	> 4.6 mg/m³ (Rat) 4 h
TITANIUM DIOXIDE 13463-67-7	> 10000 mg/kg (Rat)	N/A	N/A
TITANIUM DIOXIDE 13463-67-7	> 10000 mg/kg (Rat)	N/A	N/A
XYLENE(PURE) 1330-20-7	= 3500 mg/kg (Rat)	> 4350 mg/kg (Rabbit)	= 29.08 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
MUTAGENIC EFFECTS No information available.
Carcinogenicity This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
SYNTHETIC AMORPHOUS SILICA (PRECIPITATED) 112926-00-8	N/A	Group 3	N/A	N/A
CARBON BLACK 1333-86-4	A3	Group 2B	N/A	X
SYNTHETIC AMORPHOUS SILICA 112945-52-5	N/A	Group 3	N/A	N/A
CRYSTALLINE SILICA(QUARTZ) 14808-60-7	A2	Group 1	Known	X
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
TITANIUM DIOXIDE 13463-67-7	N/A	Group 2B	N/A	X
XYLENE(PURE) 1330-20-7	N/A	Group 3	N/A	N/A

Legend:

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
Group 3 - Not Classifiable as to Carcinogenicity in Humans
NTP (National Toxicology Program)
Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Reproductive Toxicity No information available.
Specific target organ systemic toxicity (single exposure) No information available.
Specific target organ systemic toxicity (repeated exposure) No information available.
Target Organ Effects Central nervous system (CNS), Eyes, Lymphatic System, Peripheral Nervous System (PNS), Respiratory system, Skin.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 1481 mg/kg
ATEmix (dermal) 3524 mg/kg
ATEmix (inhalation-dust/mist) 11.6 mg/l
Oral LD50 2392 mg/kg (rat) Estimated
Dermal LD50 5767 mg/kg (rat) Estimated

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
TERTIARY BUTYL ACETATE 540-88-5	N/A	296 - 362: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
METHYL AMYL KETONE 110-43-0	N/A	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	N/A
ACETYLACETONE 123-54-6	N/A	50.3 - 71.8: 96 h Lepomis macrochirus mg/L LC50 flow-through 64.1 - 80.1: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 98.3 - 110: 96 h Pimephales promelas mg/L LC50 flow-through	34.4: 48 h Daphnia magna mg/L EC50
BUTYL ACETATE 123-86-4	674.7: 72 h Desmodesmus subspicatus mg/L EC50	17 - 19: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Lepomis macrochirus mg/L LC50 static	N/A
XYLENE(PURE) 1330-20-7	N/A	13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50 780: 96 h Cyprinus carpio mg/L LC50	0.6: 48 h Gammarus lacustris mg/L LC50 3.82: 48 h water flea mg/L EC50

		semi-static 780: 96 h Cyprinus carpio mg/L LC50	

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Chemical Name	Partition coefficient
METHYL AMYL KETONE 110-43-0	1.98
ACETYLACETONE 123-54-6	0.34
BUTYL ACETATE 123-86-4	1.81
XYLENE(PURE) 1330-20-7	3.15

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste treatment methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

US EPA Waste Number D001

Chemical Name	RCRA - Basis for Listing	RCRA - D Series Wastes
XYLENE(PURE) 1330-20-7	Included in waste stream: F039	N/A

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
BUTYL ACETATE 123-86-4	Toxic
XYLENE(PURE) 1330-20-7	Toxic Ignitable

14. TRANSPORT INFORMATION

DOT

UN-No UN1263
Proper shipping name Paint
Hazard class 3
Packing Group II
Special Provisions 149, B52, IB2, T4, TP1, TP8, TP28
Description UN1263, Paint, 3, II, RQ
Emergency Response Guide Number 128

TDG

UN-No UN1263
Proper shipping name Paint
Hazard class 3
Packing Group II
Description UN1263, Paint, 3, II

MEX

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Description	UN1263, Paint, 3, II

ICAO

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Special Provisions	A3, A72
Description	UN1263, Paint, 3, II

IATA

UN-No	UN1263
Hazard class	3
Packing Group	II
ERG Code	3L
Special Provisions	A3, A72, A192

IMDG/IMO

UN-No	UN1263
Hazard class	3
Packing Group	II
EmS-No	F-E, S-E
Special Provisions	163, 367

RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Description	UN1263, Paint, 3, II

ADR/RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640C, 650, 367
Description	UN1263, Paint, 3, II, (D/E)
ADR/RID-Labels	3

ADN

Proper shipping name	Paint
Hazard class	3
Packing Group	II
Classification Code	F1
Special Provisions	163, 640C, 650
Description	UN1263, Paint, 3, II
Hazard Labels	3
Limited Quantity (LQ)	5 L
Ventilation	VE01

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CAA (Clean Air Act)

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
XYLENE(PURE)	1330-20-7	Present

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
TERTIARY BUTYL ACETATE	N/A	N/A	N/A	X
BUTYL ACETATE	5000 lb	N/A	N/A	X
XYLENE(PURE)	100 lb	N/A	N/A	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
TERTIARY BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
XYLENE(PURE)	100 lb	N/A	RQ 100 lb final RQ

			RQ 45.4 kg final RQ

State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	CAS No	California Proposition 65
CARBON BLACK	1333-86-4	Carcinogen
CRYSTALLINE SILICA(QUARTZ)	14808-60-7	Carcinogen
TITANIUM DIOXIDE	13463-67-7	Carcinogen
TITANIUM DIOXIDE	13463-67-7	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
TERTIARY BUTYL ACETATE	X	X	X	N/A	N/A
MICA (POTASSIUM ALUMINUM SILICATE)	X	X	X	N/A	N/A
SYNTHETIC AMORPHOUS SILICA (PRECIPITATED)	X	X	X	N/A	N/A
METHYL AMYL KETONE	X	X	X	N/A	N/A
ACETYLACETONE	X	X	X	N/A	N/A
BUTYL ACETATE	X	X	X	N/A	N/A
CARBON BLACK	X	X	X	X	X
CRYSTALLINE SILICA(QUARTZ)	X	X	X	X	N/A
XYLENE(PURE)	X	X	X	X	X

International Regulations

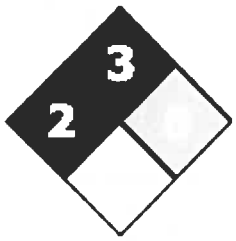
Mexico - Grade Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
TERTIARY BUTYL ACETATE	N/A	Mexico: TWA 200 ppm
MICA (POTASSIUM ALUMINUM SILICATE)	N/A	Mexico: TWA 3 mg/m³
METHYL AMYL KETONE	N/A	Mexico: TWA 50 ppm
ACETYLACETONE	N/A	Mexico: TWA 20 ppm
BUTYL ACETATE	N/A	Mexico: TWA 150 ppm Mexico: TWA 710 mg/m³ Mexico: STEL 200 ppm
CARBON BLACK	A3	Mexico: TWA 3 mg/m³
CRYSTALLINE SILICA(QUARTZ)	A2	Mexico: TWA 0.025 mg/m³
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m³
TITANIUM DIOXIDE	N/A	Mexico: TWA 10 mg/m³
XYLENE(PURE)	N/A	Mexico: TWA 100 ppm Mexico: STEL 150 ppm

16. OTHER INFORMATION

NFPA **Health Hazard** 2 **Flammability** 3 **Instability** 0 **Physical and Chemical Hazards** -

NFPA Rating



HMIS **Health Hazard** 2 * **Flammability** 3 **Physical Hazard** 0 **Personal protection** X

Chronic Hazard Star Legend ** Chronic Health Hazard*

Issuing Date: 19-Nov-2020
Revision Date: 27-Nov-2020
Revision Note
No information available

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. 31105KPX

end

SAFETY DATA SHEET

Issuing Date: 02-Jan-2021 **Revision Date:** 23-Jan-2021 **Print Date:** 23-Jan-2021

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Code: 06480CMU **Product Name: HIGH SOLIDS URA-ZEN CATALYST, PART B**

Hentzen Coatings, Inc.
6937 West Mill Road, Milwaukee, WI 53218-1225
Company Phone Number: 1-414-353-4200
Emergency telephone number ChemTrec 1-800-424-9300
Recommended use of the chemical and restrictions on use Industrial paint (Paint or Paint-Related), Restricted to professional users

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Respiratory sensitization	Category 1
Skin sensitization	Category 1
Flammable Liquids	Category 3

Label Elements

Emergency Overview

DANGER

Hazard Statements
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction
Flammable liquid and vapor

Appearance Clear **Physical state** Liquid **Odor** Solvent

Precautionary Statements - Prevention
Avoid breathing dust/fume/gas/mist/vapors/spray
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/Bond container and receiving equipment
Use explosion-proof electrical/ ventilating/ lighting/ equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Wear protective gloves/protective clothing/eye protection/face protection

If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
In case of fire: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other information
• Harmful to aquatic life with long lasting effects
• Harmful to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

There are no known carcinogenic chemicals in this product

This product contains substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990. See Section 15 for list of HAPS.

Chemical Name	CAS No	Weight-%	ACGIH	OSHA
HOMOPOLYMER OF HEXAMETHYLENE DIISOCYANATE	28182-81-2	80% - 90%	N/A	N/A
BUTYL ACETATE	123-86-4	5% - 10%	STEL: 150 ppm TWA: 50 ppm	TWA: 150 ppm TWA: 710 mg/m³
HEXAMETHYLENE DIISOCYANATE MONOMER	822-06-0	0% - 1%	TWA: 0.005 ppm	N/A

4. FIRST AID MEASURES

First Aid Measures

General advice — Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye Contact — Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin Contact — Wash off immediately with soap and plenty of water. Consult a physician if necessary. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

Inhalation — Asthma-like and/ or skin allergy-like symptoms.

Ingestion — Call a physician immediately. Never give anything by mouth to an unconscious person. Do NOT induce vomiting.

Self-protection of the first aider — Remove all sources of ignition.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects — No information available.

Indication of any immediate medical attention and special treatment needed

Notes to physician — Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use:. Dry chemical. Carbon dioxide (CO_2). Water spray. Alcohol-resistant foam.

Unsuitable Extinguishing Media No information available.

Specific hazards arising from the chemical
Flammable. Containers may explode when heated or if contaminated with water.

Explosion Data
Sensitivity to Mechanical Impact no data available.
Sensitivity to Static Discharge Yes.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Evacuate personnel to safe areas. Ensure adequate ventilation. Remove all sources of ignition. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Avoid breathing vapors or mists. Ventilate the area.
Other information	DECONTAMINATION SOLUTION: Concentrated ammonia (3 - 8%), detergent (2%) and water (90 - 95%), a solution of Union Carbide's Tergitol TMN-10 (20%) and water (80%) or a solution of 50% isopropanol, 45% water, and 5% concentrated ammonia solution(% by weight).

Environmental Precautions

Environmental Precautions	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

Methods and materials for containment and cleaning up

Methods for Containment	Decontaminate floor with decontamination solution letting stand for at least 15 minutes. Soak up with inert absorbent material.
Methods for Cleaning Up	Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use explosion-proof electrical (ventilation and lighting) equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use with local exhaust ventilation. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe vapor or mist. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. Use only non-sparking tools.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep away from heat, sparks and flame. Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture.

Incompatible Products Water. Glycol ethers. Alcohols. Epoxies. Bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH	OSHA	NIOSH IDLH
BUTYL ACETATE 123-86-4	STEL: 150 ppm TWA: 50 ppm	TWA: 150 ppm TWA: 710 mg/m³	IDLH: 1700 ppm TWA: 150 ppm TWA: 710 mg/m³ STEL: 200 ppm STEL: 950 mg/m³
HEXAMETHYLENE DIISOCYANATE MONOMER 822-06-0	TWA: 0.005 ppm	N/A	Ceiling: 0.020 ppm 10 min Ceiling: 0.140 mg/m³ 10 min TWA: 0.005 ppm TWA: 0.035 mg/m³

NIOSH IDLH: Immediately Dangerous to Life or Health

Exposure controls

Engineering Measures Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Use personal protective equipment as required.

Skin and Body Protection Chemical resistant apron.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	**Appearance**	Clear
Odor	Solvent.	**Odor Threshold**	No data available
pH	No data available	**Flash Point**	78 °F / 26 °C
Decomposition temperature	No data available	**Boiling Point**	244 °F / 118 °C
Melting Point / Melting Range	No data available	**Freezing Point**	No data available
Vapor Pressure @20°C (kPa)	No data available	**Partition coefficient:**	No data available
Vapor Density	No data available	**Density**	No data available
Bulk density	No data available	**Specific Gravity**	1.12
Evaporation Rate	No data available	**Water solubility**	No data available
Dynamic viscosity	No data available	**Weight per Gallon (lbs/gal):**	9.36
		Flammability Limits in Air	
		Upper	0 %
		Lower	0 %

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.
Conditions to Avoid
Heat, flames and sparks.
Incompatible Materials
Water. Glycol ethers. Alcohols. Epoxies. Bases.
Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information The product has not been tested

Inhalation There is no data for this product.

Eye Contact There is no data for this product.

Skin Contact There is no data for this product.

Ingestion There is no data for this product.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
BUTYL ACETATE 123-86-4	= 10768 mg/kg (Rat)	> 17600 mg/kg (Rabbit)	= 0.74 mg/L (Rat) 4 h
HEXAMETHYLENE DIISOCYANATE MONOMER 822-06-0	= 738 mg/kg (Rat)	= 593 mg/kg (Rabbit)	= 0.06 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
MUTAGENIC EFFECTS No information available.
Carcinogenicity No information available.
Legend:
Reproductive Toxicity No information available.
Specific target organ systemic toxicity (single exposure) No information available.
Specific target organ systemic toxicity (repeated exposure) No information available.
Chronic Toxicity Avoid repeated exposure.
Target Organ Effects Central nervous system (CNS), Eyes, Respiratory system, Skin.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 10963 mg/kg
ATEmix (dermal) 17936 mg/kg
ATEmix (inhalation-dust/mist) 28.2 mg/l
Oral LD50 85470 mg/kg (rat) Estimated
Dermal LD50 114943 mg/kg (rat) Estimated

Inhalation LC50 15113 mg/l (mist) (dust) mg/m³ Estimated
Inhalation LC50

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia and other aquatic invertebrates
BUTYL ACETATE 123-86-4	674.7: 72 h Desmodesmus subspicatus mg/L EC50	17 - 19: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Lepomis macrochirus mg/L LC50 static	N/A
HEXAMETHYLENE DIISOCYANATE MONOMER 822-06-0	N/A	26.1: 96 h Brachydanio rerio mg/L LC50 static	N/A

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Chemical Name	Partition coefficient
BUTYL ACETATE 123-86-4	1.81

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste treatment methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

US EPA Waste Number D001

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
BUTYL ACETATE 123-86-4	Toxic

14. TRANSPORT INFORMATION

DOT

UN-No UN1263
Proper shipping name Paint
Hazard class 3
Packing Group III
Special Provisions B1, B52, IB3, T2, TP1, TP29
Description UN1263, Paint, 3, III
Emergency Response Guide Number 128

TDG

UN-No UN1263
Proper shipping name Paint

Hazard class	3
Packing Group	III
Description	UN1263, Paint, 3, III

MEX

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	III
Description	UN1263, Paint, 3, III

ICAO

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	III
Special Provisions	A3, A72
Description	UN1263, Paint, 3, III

IATA

UN-No	UN1263
Hazard class	3
Packing Group	III
ERG Code	3L
Special Provisions	A3, A72, A192

IMDG/IMO

UN-No	UN1263
Hazard class	3
Packing Group	III
EmS-No	F-E, S-E
Special Provisions	163, 223, 367 955

RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	III
Classification Code	F1
Description	UN1263, Paint, 3, III

ADR/RID

UN-No	UN1263
Proper shipping name	Paint
Hazard class	3
Packing Group	III
Classification Code	F1
Tunnel restriction code	(D/E)
Special Provisions	163, 640E, 650, 367
Description	UN1263, Paint, 3, III, (D/E)
ADR/RID-Labels	3

ADN

Proper shipping name	Paint
Hazard class	3
Packing Group	III
Classification Code	F1
Special Provisions	163, 640E, 650
Description	UN1263, Paint, 3, III
Hazard Labels	3
Limited Quantity (LQ)	5 L
Ventilation	VE01

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CAA (Clean Air Act)
U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants This product contains the following HAPs:

Chemical Name	CAS No	Hazardous air pollutants (HAPs) content
HEXAMETHYLENE DIISOCYANATE MONOMER	822-06-0	Present

Clean Water Act
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
BUTYL ACETATE	5000 lb	N/A	N/A	X

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ (reportable quantity)
BUTYL ACETATE	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ
HEXAMETHYLENE DIISOCYANATE MONOMER	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ

State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
BUTYL ACETATE	X	X	X	N/A	N/A

International Regulations

Mexico - Grade Serious risk, Grade 3

Chemical Name	Carcinogenic Status	Exposure Limits
BUTYL ACETATE	N/A	Mexico: TWA 150 ppm Mexico: TWA 710 mg/m^3 Mexico: STEL 200 ppm
HEXAMETHYLENE DIISOCYANATE MONOMER	N/A	Mexico: TWA 0.005 ppm

16. OTHER INFORMATION

NFPA **Health Hazard** 2 **Flammability** 3 **Instability** 0 **Physical and Chemical Hazards** -

NFPA Rating

HMIS **Health Hazard** 2 * **Flammability** 3 **Physical Hazard** 1 **Personal protection** X

Chronic Hazard Star Legend ** Chronic Health Hazard*

Issuing Date: 02-Jan-2021
Revision Date: 23-Jan-2021
Revision Note
No information available

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. 06480CMU

end

SAFETY DATA SHEET (SDS)

CHEMSOL

Your Chemical Solutions Provider

CRP24702
CM85285ROB

DATE ISSUED :	4/16/2020

MIL-PRF-85285E Ty.I Cl.H #38913

1. PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: MIL-PRF-85285E Ty.I Cl.H #38913

SELLERS INFORMATION
Chemsol
12944 Farmington Road
Livonia, MI 48150
Phone: (734)429-0033

24 HR. EMERGENCY TELEPHONE NUMBER
CHEMTREC (US Transportation): 1(800)424-9300
CHEMTREC (International Transportation): +1(703)741-5970

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Hazard Classification : Flammable Liquid, Category 2
Acute Toxicity (Oral), Category 4
Eye Damage/Irritation, Category 2
Skin Corrosion/Irritation, Category 2
Sensitization - Skin, Category 1
Specific Target Organ Toxicity (Single Exposure - Respiratory Tract Irritation, Narcosis), Category 3
Specific Target Organ Toxicity (Repeated Exposure), Category 2

PHYSICAL APPEARANCE : Liquid
IMMEDIATE CONCERNS : DANGER! Flammable liquid and vapor. May cause eye, skin and respiratory tract irritation. May cause asphyxiation, or brain, lung or other organ injury if inhaled, swallowed or absorbed by the skin.
HAZARDOUS WARNING LABEL: DANGER! FLAMMABLES! Highly flammable liquid and vapour.
Harmful if swallowed.
Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause drowsiness and dizziness.
May cause damage to organs through prolonged or repeated exposure.

MIL-PRF-85285E Ty.I Cl.H #38903 Fluorescent Orange

PRECAUTIONARY STATEMENTS: Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only nonsparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

POTENTIAL HEALTH EFFECTS

EYES : Liquid is severely irritating to the eyes. High vapor concentrations are also irritating.
SKIN : Liquid is moderately irritating to the skin. Prolonged or repeated contact can result in drying of the skin which may result in skin irritation and dermatitis (rash). Liquid may be absorbed through the skin.
INGESTION : Ingestion may cause headache, dizziness, fatigue, and central nervous system depression along with gastrointestinal disturbances.
INHALATION : Vapors may be irritating to the nose, throat, and respiratory tract. Exposure to high vapor concentrations may cause central nervous system (CNS) depression. Aspiration of liquid may cause pneumontitis, pulmonary edema, and hemorrhaging.
CHRONIC : No chronic health concerns known.
CARCINOGENICITY : This material is not currently known to have carcinogenic properties.
MUTAGENICITY : This material is not know to have mutagenic effects on genetic material.
IRRITANCY: This material may cause irritation to the eyes, skin, and respiratory tract. Use correct PPE when handling this material.

REPRODUCTIVE TOXICIITY

REPRODUCTIVE EFFECTS : This material is not known to cause any reproductive system damage.
TERATOGENIC EFFECTS : This material is not known to contain any teratogenic substances.

3. COMPOSITION/CHEMICAL INFORMATION

Chemical Name	CAS Number	Weight %
Methyl n-Amyl Ketone	110-43-0	25% to 50%
Polyester Resin Solids	NONE	15% to 20%
Acetic Acid Ethyl Ester	141-78-6	5% to 10%
Acetone	67-64-1	1% to 5%
*Methyl Ethyl Ketone	78-93-3	1% to 5%

Butyl Acetate	123-86-4	1% to 5%
Silicon dioxide, chemically prepared	112945-52-5	1% to 5%
Dibutyltin Dilaurate	77-58-7	0% to 0.01%

* Toxic chemical subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

4. FIRST AID MEASURES

EYES : Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Seek medical aid if irritation persists.

SKIN : Flush skin with soap and water while removing contaminated clothing. If irritation occurs, seek immediate medical attention. Do not reuse clothing or shoes until thoroughly cleaned.

INGESTION : Do not induce vomiting, and seek immediate medical attention. Do not attempt to give any liquids if victim is unconscious.

INHALATION : Immediately remove victim to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Seek immediate medical attention.

NOTES TO PHYSICIAN: If the victim is a child, give no more than 1 glass of water and 15cc (1 tablespoon) syrup of ipecac. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage should be considered following intubation with a cuffed endotracheal tube.

5. FIRE FIGHTING MEASURES

FLASH POINT AND METHOD : 92 degrees Fahrenheit Tagliabue Closed Cup (TCC)

FLAMMABLE LIMITS : 1.7% to 12.8%

AUTOIGNITION TEMPERATURE : No data available.

GENERAL HAZARD : Carbon monoxide and unidentified organic compounds may be formed during combustion.

EXTINGUISHING MEDIA : Use water fog, "alcohol" foam, dry chemical, or CO2.

FIRE FIGHTING PROCEDURES : WARNING! Flammable Liquid. Clear the fire area of unprotected personnel. Do not enter confined fire space without full bunker gear; including a positive pressure NIOSH approved SCBA. Cool fire exposed containers with water. If water is used, fog nozzles are preferred

EXPLOSION HAZARDS : When heated above the flash point, this material emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mists or sprays may be flammable at temperatures below the flash point.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES : WARNING. Flammable. Ventilate area of leak or spill for at least 24 hours or until it has been declared safe. Remove all sources of ignition. Stop the leak if there is no risk involved. Clean-up personnel require protective clothing and respiratory protection from vapors. Absorb liquid with inert material. Only specially trained or qualified personnel should handle the emergency.

ENVIRONMENTAL PRECAUTIONS

WATER SPILL : Keep material out of storm sewers and ditches which lead to waterways.

LAND SPILL : Contact applicable authorities and determine applicable regulations based on MSDS information.

AIR RELEASE : Contact applicable authorities and determine applicable regulations based on MSDS information.

7. HANDLING AND STORAGE

GENERAL PROCEDURES : Keep away from heat, sparks, and flame. Surfaces that are hot may ignite liquid even in the absence of sparks or flame. Extinguish pilot lights, cigarettes, and turn off all other sources of ignition prior to use, and until all vapors are gone. Keep containers tightly closed and upright to prevent leakage.

COMMENTS : KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES :

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

CHEMICAL NAME	EXPOSURE LIMITS				
		OSHA PEL		ACGIH TLV	
		ppm	mg/m3	ppm	mg/m3
Methyl n-Amyl Ketone	TWA	100	465	100	465
	STEL	NL	NL	NL	NL
Acetic Acid Ethyl Ester	TWA	400	1400	400	1400
	STEL	NL	NL	NL	NL
Acetone	TWA	1000	2400	250	590
	STEL	NL	NL	NL	NL
*Methyl Ethyl Ketone	TWA	200	590	200	590
	STEL	NL	NL	300	885
Butyl Acetate	TWA	150	710	150	710
	STEL	NL	NL	200	950
Silicon dioxide, chemically prepared	TWA	N/A	15	N/A	10
	STEL	N/A	NL	N/A	NL

OSHA TABLE COMMENTS:
NL = Not Listed

Ca = "WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM."

ENGINEERING CONTROLS: Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

SKIN: Wear resistant gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

RESPIRATORY: If exposure may or does exceed occupational exposure limits (Section 8) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134, use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

HYGIENIC WORK PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

COMMENTS: May be harmful or fatal if swallowed. May irritate body tissues. Use with adequate ventilation. Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE : Liquid
ODOR : Typical paint odor.
pH : Not Applicable
BOILING POINT : 133 Degrees Fahrenheit to 244 Degrees Fahrenheit
FREEZING POINT : No data available
VOLATILE ORGANIC COMPOUNDS: 326 G/L (2.72 Lbs/Gal)
(VOC Theoretical – As Packaged)
HAZARDOUS AIR POLLUTANTS (HAP's): 0 G/L (0.00 Lbs/Gal)
(HAP's Theoretical – As Packaged)
SOLUBILITY IN WATER : Soluble in most organic solvents. Not soluble in water.
EVAPORATION RATE : No data available
DENSITY : 9.58 (Lbs/Gal)

10. STABILITY AND REACTIVITY

STABLE : Yes

HAZARDOUS POLYMERIZATION : Will not occur

CONDITIONS TO AVOID : Avoid heat, sparks, flame and contact with strong oxidizing agents. Prevent vapor accumulation.

POLYMERIZATION : Avoid heat, flame, and other sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and unidentified organic compounds may be formed during combustion.

INCOMPATIBLE MATERIALS : Strong oxidizers.

11. TOXICOLOGICAL INFORMATION

GENERAL COMMENTS: None identified.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Keep out of waterways.

13. DISPOSAL INFORMATION

DISPOSAL METHOD: This material is a US EPA defined ignitable hazardous waste. The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

EMPTY CONTAINER: KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

RCRA/EPA WASTE INFORMATION: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)
PROPER SHIPPING NAME : UN1263, Paint, Class 3, PG III
(UN#, Proper Shipping Name, Class, Packing Group)

***** The manufacturer verifies that the material was supplied and shipped in the proper packages in accordance with DOT and federal regulations that are applicable to the mode of transportation selected. The shipper must verify that the packaging supplied is acceptable to be re-shipped in per the federal regulations applicable to the mode of transportation for re-shipment. Regulations may change depending on mode of transportation selected.*****

15. REGULATORY INFORMATION

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)
311/312 HAZARD CATEGORIES: This product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard, and a fire hazard.

MIL-PRF-85285E Ty.I Cl.H #38903 Fluorescent Orange

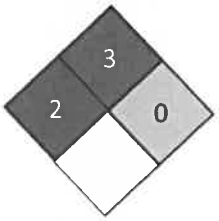
FIRE : Yes **PRESSURE GENERATING :** No
REACTIVITY : No **ACUTE :** Yes **CHRONIC :** Yes
313 REPORTABLE INGREDIENTS: To the best of our knowledge, this product is not listed as a toxic chemical.

302/304 EMERGENCY PLANNING
EMERGENCY PLAN: To the best of our knowledge, this material is not listed as an extremely hazardous substance.

16. OTHER INFORMATION

HMIS RATING	
Health :	2
Flammability :	3
Reactivity :	0
Personal Protection :	G

NFPA CODES



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The conditions or methods of handling, storage, use and disposal of the product are beyond Chemsol's control. The information provided herein may not be valid for this product if it is used in combination with any other materials or process. It is the user's responsibility to determine the suitability of the product, review the information provided herein, assess the safety and toxicity of the product and to comply with all applicable laws and regulations. For this and other reasons, Chemsol does not assume responsibility and expressly disclaims liability for any loss damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

SAFETY DATA SHEET (SDS)

CHEMSOL

Your Chemical Solutions Provider

Multiple KITS
CM85285IHC

DATE ISSUED :	1/3/2019

MIL-PRF-85285E Ty. I Cl. H Catalyst (1:1 Mix)

1. PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: MIL-PRF-85285E Ty. I Cl. H Catalyst (1:1 Mix)

SELLERS INFORMATION
Chemsol
12944 Farmington Road
Livonia, MI 48150
Phone: (734)429-0033

24 HR. EMERGENCY TELEPHONE NUMBER
CHEMTREC (US Transportation): 1(800)424-9300
CHEMTREC (International Transportation): +1(703)741-5970

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Hazard Classification : Flammable Liquid, Category 2
Acute Toxicity (Oral), Category 4
Eye Damage/Irritation, Category 2
Skin Corrosion/Irritation, Category 2
Sensitization - Skin, Category 1
Sensitization - Respiratory, Category 1
Specific Target Organ Toxicity (Single Exposure - Respiratory Tract Irritation, Narcosis), Category 3
Specific Target Organ Toxicity (Repeated Exposure), Category 2

PHYSICAL APPEARANCE : Liquid
IMMEDIATE CONCERNS : DANGER! Flammable liquid and vapor. May cause eye, skin and respiratory tract irritation. May cause asphyxiation, or brain, lung or other organ injury if inhaled, swallowed or absorbed by the skin.
HAZARDOUS WARNING LABEL: DANGER! FLAMMABLES! Highly flammable liquid and vapour.
Harmful if swallowed.
Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause respiratory sensitization.
May cause drowsiness and dizziness.

MIL-PRF-85285E Ty. I Cl. H Catalyst (1:1 Mix)

May cause damage to organs through prolonged or repeated exposure.

PRECAUTIONARY STATEMENTS: Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only nonsparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

POTENTIAL HEALTH EFFECTS

EYES : Liquid is severely irritating to the eyes. High vapor concentrations are also irritating.
SKIN : Liquid is moderately irritating to the skin. Prolonged or repeated contact can result in drying of the skin which may result in skin irritation and dermatitis (rash). Liquid may be absorbed through the skin.
INGESTION : Ingestion may cause headache, dizziness, fatigue, and central nervous system depression along with gastrointestinal disturbances.
INHALATION : Vapors may be irritating to the nose, throat, and respiratory tract. Exposure to high vapor concentrations may cause central nervous system (CNS) depression. Aspiration of liquid may cause pneumontitis, pulmonary edema, and hemorrhaging.
CHRONIC : No chronic health concerns known.
CARCINOGENICITY : This material is not currently known to have carcinogenic properties.
MUTAGENICITY : This material is not know to have mutagenic effects on genetic material.
IRRITANCY: This material may cause irritation to the eyes, skin, and respiratory tract. Use correct PPE when handling this material.

REPRODUCTIVE TOXICIITY

REPRODUCTIVE EFFECTS : This material is not known to cause any reproductive system damage.
TERATOGENIC EFFECTS : This material is not known to contain any teratogenic substances.

3. COMPOSITION/CHEMICAL INFORMATION

Chemical Name	CAS Number	Weight %
Butyl Acetate	123-86-4	25% to 50%
*Hexane, 1,6-Diisocyanato-, Homopolymer	28182-81-2	25% to 50%
Acetone	67-64-1	20% to 25%
*Xylenes, Mixed Isomers	1330-20-7	5% to 10%

* Toxic chemical subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

4. FIRST AID MEASURES

EYES : Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Seek medical aid if irritation persists.

SKIN : Flush skin with soap and water while removing contaminated clothing. If irritation occurs, seek immediate medical attention. Do not reuse clothing or shoes until thoroughly cleaned.

INGESTION : Do not induce vomiting, and seek immediate medical attention. Do not attempt to give any liquids if victim is unconscious.

INHALATION : Immediately remove victim to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Seek immediate medical attention.

NOTES TO PHYSICIAN: If the victim is a child, give no more than 1 glass of water and 15cc (1 tablespoon) syrup of ipecac. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage should be considered following intubation with a cuffed endotracheal tube.

5. FIRE FIGHTING MEASURES

FLASH POINT AND METHOD : 70 degrees Fahrenheit Tagliabue Closed Cup (TCC)

FLAMMABLE LIMITS : 1.0% to 12.8%

AUTOIGNITION TEMPERATURE : No data available.

GENERAL HAZARD : Carbon monoxide and unidentified organic compounds may be formed during combustion.

EXTINGUISHING MEDIA : Use water fog, "alcohol" foam, dry chemical, or CO2.

FIRE FIGHTING PROCEDURES : WARNING! Flammable Liquid. Clear the fire area of unprotected personnel. Do not enter confined fire space without full bunker gear; including a positive pressure NIOSH approved SCBA. Cool fire exposed containers with water. If water is used, fog nozzles are preferred

EXPLOSION HAZARDS : When heated above the flash point, this material emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mists or sprays may be flammable at temperatures below the flash point.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES : WARNING. Flammable. Ventilate area of leak or spill for at least 24 hours or until it has been declared safe. Remove all sources of ignition. Stop the leak if there is no risk involved. Clean-up personnel require protective clothing and respiratory protection from vapors. Absorb liquid with inert material. Only specially trained or qualified personnel should handle the emergency.

ENVIRONMENTAL PRECAUTIONS

WATER SPILL : Keep material out of storm sewers and ditches which lead to waterways.

LAND SPILL : Contact applicable authorities and determine applicable regulations based on MSDS information.

AIR RELEASE : Contact applicable authorities and determine applicable regulations based on MSDS information.

7. HANDLING AND STORAGE

GENERAL PROCEDURES : Keep away from heat, sparks, and flame. Surfaces that are hot may ignite liquid even in the absence of sparks or flame. Extinguish pilot lights, cigarettes, and turn off all other sources of ignition prior to use, and until all vapors are gone. Keep containers tightly closed and upright to prevent leakage.

COMMENTS : KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES :

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

CHEMICAL NAME	EXPOSURE LIMITS				
		OSHA PEL		ACGIH TLV	
		ppm	mg/m3	ppm	mg/m3
Butyl Acetate	TWA	150	710	150	710
	STEL	NL	NL	200	950
*Hexane, 1,6-Diisocyanato-, Homopolymer	TWA	NL	NL	0.01	0.11
	STEL	NL	NL	NL	NL
Acetone	TWA	1000	2400	250	590
	STEL	NL	NL	NL	NL
*Xylenes, Mixed Isomers	TWA	100	435	100	435
	STEL	NL	NL	150	635

OSHA TABLE COMMENTS:
NL = Not Listed
Ca = "WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM."

ENGINEERING CONTROLS: Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

SKIN: Wear resistant gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

RESPIRATORY: If exposure may or does exceed occupational exposure limits (Section 8) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134, use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

HYGIENIC WORK PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

COMMENTS: May be harmful or fatal if swallowed. May irritate body tissues. Use with adequate ventilation. Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE : Liquid
ODOR : Typical paint odor.
pH : Not Applicable
BOILING POINT : 244 Degrees Fahrenheit to 280 Degrees Fahrenheit
FREEZING POINT : No data available
VOLATILE ORGANIC COMPOUNDS: 412 G/L (3.43 Lbs/Gal)
(VOC Theoretical – As Packaged)
HAZARDOUS AIR POLLUTANTS (HAP's): 105 G/L (0.88 Lbs/Gal)
(HAP's Theoretical – As Packaged)
SOLUBILITY IN WATER : Soluble in most organic solvents. Not soluble in water.
EVAPORATION RATE : No data available
DENSITY : 7.72 (Lbs/Gal)

10. STABILITY AND REACTIVITY

STABLE : Yes

HAZARDOUS POLYMERIZATION : Will not occur

CONDITIONS TO AVOID : Avoid heat, sparks, flame and contact with strong oxidizing agents. Prevent vapor accumulation.

POLYMERIZATION : Avoid heat, flame, and other sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and unidentified organic compounds may be formed during combustion.

INCOMPATIBLE MATERIALS : Strong oxidizers.

11. TOXICOLOGICAL INFORMATION

MIL-PRF-85285E Ty. I Cl. H Catalyst (1:1 Mix)

GENERAL COMMENTS: None identified.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Keep out of waterways.

13. DISPOSAL INFORMATION

DISPOSAL METHOD: This material is a US EPA defined ignitable hazardous waste. The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

EMPTY CONTAINER: KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

RCRA/EPA WASTE INFORMATION: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)
PROPER SHIPPING NAME : UN1263, Paint, Class 3, PG II
(UN#, Proper Shipping Name, Class, Packing Group)

***** The manufacturer verifies that the material was supplied and shipped in the proper packages in accordance with DOT and federal regulations that are applicable to the mode of transportation selected. The shipper must verify that the packaging supplied is acceptable to be re-shipped in per the federal regulations applicable to the mode of transportation for re-shipment. Regulations may change depending on mode of transportation selected.*****

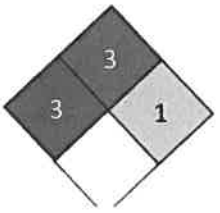
15. REGULATORY INFORMATION

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)
311/312 HAZARD CATEGORIES: This product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard, and a fire hazard.
FIRE : Yes **PRESSURE GENERATING :** No
REACTIVITY : No **ACUTE :** Yes **CHRONIC :** Yes
313 REPORTABLE INGREDIENTS: To the best of our knowledge, this product is not listed as a toxic chemical.

302/304 EMERGENCY PLANNING
EMERGENCY PLAN: To the best of our knowledge, this material is not listed as an extremely hazardous substance.

16. OTHER INFORMATION

NFPA CODES



MIL-PRF-85285E Ty. I Cl. H Catalyst (1:1 Mix)

HMIS RATING	
Health :	3
Flammability :	3
Reactivity :	1
Personal Protection :	G

MANUFACTURER DISCLAIMER : To the best of Chemsol's knowledge, all information, recommendations, and suggestions appearing herein concerning this product are taken from sources or based upon data believed to be reliable. Although reasonable care has been taken in the preparation of this information, Chemsol extends no warranties or guarantees, express or implied, makes no representations and assumes no responsibility as to the accuracy, reliability or completeness of the information presented. Chemsol assumes no liability arising out of the use of the product by others.

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SAFETY DATA SHEET

Date of issue/Date of revision **17 October 2019** CRP24707 PRC8201FGB

Version 1

Section 1. Identification

Product name	:	CA8211/F34230 BASE COMPONENT
Product code	:	CA8211/F34230 BASE COMPONENT
Other means of identification	:	Not available.
Product type	:	Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use	:	Industrial applications.
Use of the substance/ mixture	:	Coating.
Uses advised against	:	Not applicable.

Manufacturer	:	PPG Aerospace PRC-DeSoto 12780 San Fernando Road Sylmar, CA 91342 Phone: 818 362 6711
Emergency telephone number	:	(412) 434-4515 (U.S.) (514) 645-1320 (Canada) 01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	:	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 TOXIC TO REPRODUCTION (Fertility) - Category 1B TOXIC TO REPRODUCTION (Unborn child) - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 6.2% (Oral), 30.1% (Dermal), 50% (Inhalation)

Section 2. Hazards identification

This product contains TiO2 which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many PPG products, TiO2 is utilized as a raw material in a liquid coating formulation. In this case, the TiO2 particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO2 when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8).

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Flammable liquid and vapor.
Harmful if swallowed.
Causes serious eye irritation.
May cause an allergic skin reaction.
May damage fertility or the unborn child.
Suspected of causing cancer.
May cause drowsiness or dizziness.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response : IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Sanding and grinding dusts may be harmful if inhaled. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Section 2. Hazards identification

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Product name : CA8211/F34230 BASE COMPONENT

Ingredient name	%	CAS number
butanone	≥10 - ≤20	78-93-3
1,3-Benzenedicarboxylic acid, polymer with 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol, hexanedioic acid and 1,6-hexanediol	≥10 - ≤20	69929-19-7
heptan-2-one	≥5.0 - ≤10	110-43-0
barium sulfate	≥5.0 - ≤9.2	7727-43-7
pentane-2,4-dione	≥5.0 - ≤8.1	123-54-6
titanium dioxide	≥1.0 - ≤5.0	13463-67-7
2-methoxy-1-methylethyl acetate	≥1.0 - ≤5.0	108-65-6
Acetic acid, C8-10-branched alkyl esters, C9-rich	≥1.0 - ≤5.0	108419-33-6
dibutyltin dilaurate	<1.0	77-58-7
toluene	<1.0	108-88-3

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Section 4. First aid measures

Skin contact : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Section 5. Fire-fighting measures

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
sulfur oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
butanone	**ACGIH TLV (United States, 3/2018).** STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours.
1,3-Benzenedicarboxylic acid, polymer with 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol, hexanedioic acid and 1,6-hexanediol	None.
heptan-2-one	**ACGIH TLV (United States, 3/2018).** TWA: 233 mg/m³ 8 hours.

Section 8. Exposure controls/personal protection

	TWA: 50 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 465 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
barium sulfate	**ACGIH TLV (United States, 3/2018).** TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction **OSHA PEL (United States, 5/2018).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust
pentane-2,4-dione	**ACGIH TLV (United States, 3/2018). Absorbed through skin.** TWA: 25 ppm 8 hours.
titanium dioxide	**OSHA PEL (United States, 5/2018).** TWA: 15 mg/m³ 8 hours. Form: Total dust **ACGIH TLV (United States, 3/2018).** TWA: 10 mg/m³ 8 hours.
2-methoxy-1-methylethyl acetate	**IPEL (PPG, 10/2017). Absorbed through skin.** TWA: 30 ppm STEL: 90 ppm
Acetic acid, C8-10-branched alkyl esters, C9-rich	None.
dibutyltin dilaurate	**ACGIH TLV (United States, 3/2018). Absorbed through skin.** STEL: 0.2 mg/m³, (as Sn) 15 minutes. TWA: 0.1 mg/m³, (as Sn) 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 0.1 mg/m³, (as Sn) 8 hours. **OSHA PEL (United States).** TWA: 0.1 mg/m³, (as Sn)
toluene	**OSHA PEL Z2 (United States, 2/2013).** AMP: 500 ppm 10 minutes. CEIL: 300 ppm TWA: 200 ppm 8 hours. **ACGIH TLV (United States, 3/2018).** TWA: 20 ppm 8 hours.

Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

Consult local authorities for acceptable exposure limits.

Section 8. Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : For prolonged or repeated handling, use the following type of gloves:

Recommended: neoprene, natural rubber (latex), butyl rubber
May be used: nitrile rubber, Chloroprene

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.
Color : Green.
Odor : Not available.
Odor threshold : Not available.
pH : Not available.
Melting point : Not available.
Boiling point : >37.78°C (>100°F)
Flash point : Closed cup: 26.67°C (80°F)
Auto-ignition temperature : Not available.
Decomposition temperature : Not available.
Flammability (solid, gas) : Not available.
Lower and upper explosive (flammable) limits : Not available.
Evaporation rate : Not available.
Vapor pressure : Not available.
Vapor density : Not available.
Relative density : 1.19
Density (lbs / gal) : 9.93
Solubility : Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water : Not available.
Viscosity : Kinematic (40°C (104°F)): >0.21 cm^2/s (>21 cSt)
VOC : 492 g/l

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Section 10. Stability and reactivity

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
butanone	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-
heptan-2-one	LC50 Inhalation Vapor	Rat	16.7 mg/l	4 hours
	LD50 Dermal	Rabbit	10.206 g/kg	-
	LD50 Oral	Rat	1.6 g/kg	-
barium sulfate	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
pentane-2,4-dione	LC50 Inhalation Vapor	Rat	5.1 mg/l	4 hours
	LD50 Dermal	Rat	790 mg/kg	-
	LD50 Oral	Rat	570 mg/kg	-
titanium dioxide	LC50 Inhalation Dusts and mists	Rat	>6.82 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
2-methoxy-1-methylethyl acetate	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	8532 mg/kg	-
Acetic acid, C8-10-branched alkyl esters, C9-rich	LD50 Oral	Rat - Female	>2000 mg/kg	-
dibutyltin dilaurate	LD50 Oral	Rat	2071 mg/kg	-
toluene	LC50 Inhalation Vapor	Rat	49 g/m³	4 hours
	LD50 Dermal	Rabbit	8.39 g/kg	-
	LD50 Oral	Rat	5580 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Acetic acid, C8-10-branched alkyl esters, C9-rich	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Positive

Section 11. Toxicological information

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
titanium dioxide	-	2B	-
toluene	-	3	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
butanone	Category 3	Not applicable.	Narcotic effects
heptan-2-one	Category 3	Not applicable.	Narcotic effects
Acetic acid, C8-10-branched alkyl esters, C9-rich	Category 3	Not applicable.	Narcotic effects
	Category 3	Not applicable.	Respiratory tract irritation
dibutyltin dilaurate	Category 1	Not determined	thymus
toluene	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
dibutyltin dilaurate	Category 1	Oral	immune system
toluene	Category 2	Not determined	Not determined

Target organs : Contains material which causes damage to the following organs: mucous membranes, brain, .
Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, peripheral nervous system, upper respiratory tract, immune system, skin, central nervous system (CNS), eye, lens or cornea.

Aspiration hazard

Name	Result
Acetic acid, C8-10-branched alkyl esters, C9-rich	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Potential acute health effects

Section 11. Toxicological information

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. This product contains TiO_2 which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many PPG products, TiO_2 is utilized as a raw material in a liquid coating formulation. In this case, the TiO_2 particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO_2 when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8). Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term

Section 11. Toxicological information

and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : May damage the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : May damage fertility.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
CA8211/F34230 BASE COMPONENT	1888.3	6767.6	N/A	28.2	7.6
butanone	2737	6480	N/A	N/A	N/A
1,3-Benzenedicarboxylic acid, polymer with 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol, hexanedioic acid and 1,6-hexanediol	500	N/A	N/A	N/A	N/A
heptan-2-one	1600	10206	N/A	16.7	1.5
barium sulfate	N/A	2500	N/A	N/A	N/A
pentane-2,4-dione	570	790	N/A	5.1	N/A
2-methoxy-1-methylethyl acetate	8532	N/A	N/A	N/A	N/A
Acetic acid, C8-10-branched alkyl esters, C9-rich	2500	N/A	N/A	N/A	N/A
dibutyltin dilaurate	2071	N/A	N/A	N/A	N/A
toluene	5580	8390	N/A	49	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
heptan-2-one	Acute LC50 131 mg/l	Fish	96 hours
titanium dioxide	Acute LC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
2-methoxy-1-methylethyl acetate	Acute LC50 161 mg/l Fresh water	Fish	96 hours
dibutyltin dilaurate	EC50 0.463 mg/l	Daphnia	48 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
heptan-2-one	OECD 310	69 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
heptan-2-one	-	-	Readily
toluene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
butanone	0.29	-	low
heptan-2-one	1.98	-	low
pentane-2,4-dione	0.4	-	low
2-methoxy-1-methylethyl acetate	0.56	-	low
dibutyltin dilaurate	3.12	-	low
toluene	2.73	8.32	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact

Section 13. Disposal considerations

with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.
Product RQ (lbs)	10591.9	Not applicable.	Not applicable.
RQ substances	(xylene , butanone)	Not applicable.	Not applicable.

Additional information

DOT : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are listed or exempted.

United States - TSCA 12(b) - Chemical export notification:
pentane-2,4-dione — One time notification

United States - TSCA 5(a)2 - Final significant new use rules:
pentane-2,4-dione — Listed

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

Section 15. Regulatory information

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (oral) - Category 4
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION (Fertility) - Category 1B
TOXIC TO REPRODUCTION (Unborn child) - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
butanone	≥10 - ≤20	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
1,3-Benzenedicarboxylic acid, polymer with 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol, hexanedioic acid and 1,6-hexanediol	≥10 - ≤20	COMBUSTIBLE DUSTS ACUTE TOXICITY (oral) - Category 4 EYE IRRITATION - Category 2A
heptan-2-one	≥5.0 - ≤10	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
pentane-2,4-dione	≥5.0 - ≤8.1	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 3
titanium dioxide	≥1.0 - ≤5.0	CARCINOGENICITY - Category 2
Acetic acid, C8-10-branched alkyl esters, C9-rich	≥1.0 - ≤5.0	FLAMMABLE LIQUIDS - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
dibutyltin dilaurate	<1.0	SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 GERM CELL MUTAGENICITY - Category 2 TOXIC TO REPRODUCTION (Fertility) - Category 1B TOXIC TO REPRODUCTION (Unborn child) - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (thymus) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED

Section 15. Regulatory information

toluene	<1.0	EXPOSURE) (immune system) (oral) - Category 1 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant

SARA 313

	Chemical name	CAS number	Concentration
Supplier notification :	bismuth vanadium tetraoxide	14059-33-7	5 - 10

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

⚠ **WARNING**: Reproductive Harm - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 3 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability** : 3 **Instability** : 0

Date of previous issue : **No previous validation**

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

Section 16. Other information

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Multiple KITS
CMT13185
PRCCA8200B

Date of issue/Date of revision **3 December 2019**
Version 16

Section 1. Identification

Product name	:	CA 8200B M&D ACTIVATOR COMPONENT
Product code	:	CA 8200B M&D ACTIVATOR COMPONENT
Other means of identification	:	Not available.
Product type	:	Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use	:	Industrial applications.
Use of the substance/ mixture	:	Coating.; Hardener.
Uses advised against	:	Not applicable.

Manufacturer	:	PPG Aerospace PRC-DeSoto 12780 San Fernando Road Sylmar, CA 91342 Phone: 818 362 6711
Emergency telephone number	:	(412) 434-4515 (U.S.) (514) 645-1320 (Canada) 01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	:	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 1.3% (Dermal), 2.5% (Inhalation)

GHS label elements

Hazard pictograms :

Signal word : Danger

Section 2. Hazards identification

Hazard statements : Flammable liquid and vapor.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause respiratory irritation.

Precautionary statements

Prevention : Wear protective gloves. Wear eye or face protection. Wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Contaminated work clothing must not be allowed out of the workplace.

Response : IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Moisture-sensitive material. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Product name : CA 8200B M&D ACTIVATOR COMPONENT

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
Hexamethylene diisocyanate, oligomers.	≥75 - ≤90	28182-81-2
heptan-2-one	≥5.0 - ≤10	110-43-0
n-butyl acetate	≥1.0 - ≤5.0	123-86-4
Solvent naphtha (petroleum), light aromatic	≥0.10 - ≤2.9	64742-95-6
1,2,4-trimethylbenzene	≤1.6	95-63-6
hexamethylene-di-isocyanate	<1.0	822-06-0

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Section 4. First aid measures

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
Cyanate and isocyanate.
hydrogen cyanide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Special provisions : Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13). Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Precautions should be taken to minimize exposure to atmospheric humidity or water. CO_2 will be formed, which, in closed containers, could result in pressurization.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Hexamethylene diisocyanate, oligomers.	**IPEL (PPG).** TWA: 0.5 mg/m³ STEL: 1 mg/m³
heptan-2-one	**ACGIH TLV (United States, 3/2019).** TWA: 233 mg/m³ 8 hours. TWA: 50 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 465 mg/m³ 8 hours. TWA: 100 ppm 8 hours.

Section 8. Exposure controls/personal protection

n-butyl acetate	**OSHA PEL (United States, 5/2018).** TWA: 710 mg/m³ 8 hours. TWA: 150 ppm 8 hours. **ACGIH TLV (United States, 3/2019).** STEL: 150 ppm 15 minutes. TWA: 50 ppm 8 hours.
Solvent naphtha (petroleum), light aromatic	None.
1,2,4-trimethylbenzene	**ACGIH TLV (United States, 3/2019).** TWA: 123 mg/m³ 8 hours. TWA: 25 ppm 8 hours.
hexamethylene-di-isocyanate	**ACGIH TLV (United States, 3/2019).** TWA: 0.03 mg/m³ 8 hours. TWA: 0.005 ppm 8 hours. **OSHA PEL (United States, 5/2018).** **Absorbed through skin.** TWA: 5 mg/m³, (as CN) 8 hours.

Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

Eye/face protection : Safety glasses with side shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : By spraying: air-fed respirator. By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Restrictions on use : Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Clear.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : 126.11 to 148.89°C (259 to 300°F)

Flash point : Closed cup: 38°C (100.4°F)

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Evaporation rate : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1.09

Section 9. Physical and chemical properties

Density (lbs / gal) : 9.1

Solubility : Insoluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not available.

Viscosity : Kinematic (40°C (104°F)): >0.21 cm^2/s (>21 cSt)

VOC : 206 g/l

% Solid. (w/w) : 81

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : In a fire, hazardous decomposition products may be produced.
Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from: oxidizing agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hexamethylene diisocyanate, oligomers.	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat - Female	>2500 mg/kg	-
heptan-2-one	LC50 Inhalation Vapor	Rat	16.7 mg/l	4 hours
	LD50 Dermal	Rabbit	10.206 g/kg	-
	LD50 Oral	Rat	1.6 g/kg	-
n-butyl acetate	LC50 Inhalation Vapor	Rat	>21.1 mg/l	4 hours
	LC50 Inhalation Vapor	Rat	2000 ppm	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10.768 g/kg	-
Solvent naphtha (petroleum), light aromatic	LD50 Dermal	Rabbit	3.48 g/kg	-
	LD50 Oral	Rat	8400 mg/kg	-
1,2,4-trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m^3	4 hours
	LD50 Oral	Rat	5 g/kg	-

Section 11. Toxicological information

hexamethylene-di-isocyanate	LC50 Inhalation Dusts and mists LC50 Inhalation Vapor LC50 Inhalation Vapor LD50 Dermal LD50 Oral	Rat Rat Rat Rabbit Rat	124 mg/m³ 151 mg/m³ 22 ppm 0.57 g/kg 0.71 g/kg	4 hours 4 hours 4 hours - -

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Hexamethylene diisocyanate, oligomers.	Category 3	Not applicable.	Respiratory tract irritation
heptan-2-one	Category 3	Not applicable.	Narcotic effects
n-butyl acetate	Category 3	Not applicable.	Narcotic effects
Solvent naphtha (petroleum), light aromatic	Category 3	Not applicable.	Narcotic effects
	Category 3	Not applicable.	Respiratory tract irritation
1,2,4-trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
hexamethylene-di-isocyanate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which causes damage to the following organs: brain, central nervous system (CNS).
Contains material which may cause damage to the following organs: blood, lungs, peripheral nervous system, upper respiratory tract, skin, eye, lens or cornea.

Section 11. Toxicological information

Aspiration hazard

Name	Result
Solvent naphtha (petroleum), light aromatic	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Repeated exposure may lead to permanent respiratory disability. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Section 11. Toxicological information

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
CA 8200B M&D ACTIVATOR COMPONENT	2573.1	3023.4	N/A	12.5	1.6
Hexamethylene diisocyanate, oligomers.	2500	2500	N/A	11	1.5
heptan-2-one	1600	10206	N/A	16.7	1.5
n-butyl acetate	10768	N/A	N/A	N/A	N/A
Solvent naphtha (petroleum), light aromatic	8400	3480	N/A	N/A	N/A
1,2,4-trimethylbenzene	5000	N/A	N/A	18	1.5
hexamethylene-di-isocyanate	710	570	N/A	0.151	0.124

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Hexamethylene diisocyanate, oligomers.	Acute EC50 >1000 mg/l	Algae - scenedesmus subspicatus	72 hours
	Acute EC50 >100 mg/l	Daphnia - daphnia magna	48 hours
	Acute LC50 >100 mg/l	Fish - Danio rerio (zebra fish)	96 hours
heptan-2-one	Acute LC50 131 mg/l	Fish	96 hours
Solvent naphtha (petroleum), light aromatic	Acute LC50 8.2 mg/l	Fish	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
heptan-2-one	OECD 310	69 % - Readily - 28 days	-	-

Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hexamethylene diisocyanate, oligomers.	-	-	Not readily
heptan-2-one	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Hexamethylene diisocyanate, oligomers.	-	3.2	low
heptan-2-one	1.98	-	low
n-butyl acetate	1.78	-	low
1,2,4-trimethylbenzene	3.63	120.23	low
hexamethylene-di-isocyanate	1.08	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

Additional information

DOT : This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are listed or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
HNOC - Defatting irritant

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Classification
Hexamethylene diisocyanate, oligomers.	≥75 - ≤90	COMBUSTIBLE DUSTS ACUTE TOXICITY (inhalation) - Category 4 SKIN SENSITIZATION - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
heptan-2-one	≥5.0 - ≤10	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
n-butyl acetate	≥1.0 - ≤5.0	FLAMMABLE LIQUIDS - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
Solvent naphtha (petroleum), light aromatic	≥0.10 - ≤2.9	FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
1,2,4-trimethylbenzene	≤1.6	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Defatting irritant
hexamethylene-di-isocyanate	<1.0	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 1 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1A SKIN SENSITIZATION - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

SARA 313

	Chemical name	CAS number	Concentration
Supplier notification :	1,2,4-trimethylbenzene	95-63-6	0.5 - 1.5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 3 * **Flammability** : 2 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 3 **Flammability** : 2 **Instability** : 0

Date of previous issue : **6/26/2019**

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET (SDS)

CHEMSOL

Your Chemical Solutions Provider

DATE ISSUED :	2/1/2019

MIL-PRF-85285E Ty.I Cl.H #35109 Blue Polyurethane

1. PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: MIL-PRF-85285E Ty.I Cl.H #35109 Blue Polyurethane

SELLERS INFORMATION
Chemsol
12944 Farmington Road
Livonia, MI 48150
Phone: (734)429-0033

24 HR. EMERGENCY TELEPHONE NUMBER
CHEMTREC (US Transportation): 1(800)424-9300
CHEMTREC (International Transportation): +1(703)741-5970

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Hazard Classification : Flammable Liquid, Category 2
Acute Toxicity (Oral), Category 4
Eye Damage/Irritation, Category 2
Skin Corrosion/Irritation, Category 2
Sensitization - Skin, Category 1
Specific Target Organ Toxicity (Single Exposure - Respiratory Tract Irritation, Narcosis), Category 3
Specific Target Organ Toxicity (Repeated Exposure), Category 2

PHYSICAL APPEARANCE : Liquid
IMMEDIATE CONCERNS : DANGER! Flammable liquid and vapor. May cause eye, skin and respiratory tract irritation. May cause asphyxiation, or brain, lung or other organ injury if inhaled, swallowed or absorbed by the skin.
HAZARDOUS WARNING LABEL: DANGER! FLAMMABLES! Highly flammable liquid and vapour.
Harmful if swallowed.
Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause drowsiness and dizziness.
May cause damage to organs through prolonged or repeated exposure.

PRECAUTIONARY STATEMENTS: Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only nonsparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

POTENTIAL HEALTH EFFECTS

EYES : Liquid is severely irritating to the eyes. High vapor concentrations are also irritating.
SKIN : Liquid is moderately irritating to the skin. Prolonged or repeated contact can result in drying of the skin which may result in skin irritation and dermatitis (rash). Liquid may be absorbed through the skin.
INGESTION : Ingestion may cause headache, dizziness, fatigue, and central nervous system depression along with gastrointestinal disturbances.
INHALATION : Vapors may be irritating to the nose, throat, and respiratory tract. Exposure to high vapor concentrations may cause central nervous system (CNS) depression. Aspiration of liquid may cause pneumontitis, pulmonary edema, and hemorrhaging.
CHRONIC : No chronic health concerns known.
CARCINOGENICITY : This material is not currently known to have carcinogenic properties.
MUTAGENICITY : This material is not know to have mutagenic effects on genetic material.
IRRITANCY: This material may cause irritation to the eyes, skin, and respiratory tract. Use correct PPE when handling this material.

REPRODUCTIVE TOXICIITY

REPRODUCTIVE EFFECTS : This material is not known to cause any reproductive system damage.
TERATOGENIC EFFECTS : This material is not known to contain any teratogenic substances.

3. COMPOSITION/CHEMICAL INFORMATION

Chemical Name	CAS Number	Weight %
Methyl n-Amyl Ketone	110-43-0	25% to 50%
Talc	14807-96-6	15% to 20%
Polyester Resin Solids	NONE	10% to 15%
Acetone	67-64-1	10% to 15%
Acetic Acid Ethyl Ester	141-78-6	5% to 10%

Butyl Acetate	123-86-4	1% to 5%
Carbon Black	1333-86-4	0.01% to 1%
Dibutyltin Dilaurate	77-58-7	0% to 0.01%

* Toxic chemical subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

4. FIRST AID MEASURES

EYES : Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Seek medical aid if irritation persists.

SKIN : Flush skin with soap and water while removing contaminated clothing. If irritation occurs, seek immediate medical attention. Do not reuse clothing or shoes until thoroughly cleaned.

INGESTION : Do not induce vomiting, and seek immediate medical attention. Do not attempt to give any liquids if victim is unconscious.

INHALATION : Immediately remove victim to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Seek immediate medical attention.

NOTES TO PHYSICIAN: If the victim is a child, give no more than 1 glass of water and 15cc (1 tablespoon) syrup of ipecac. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage should be considered following intubation with a cuffed endotracheal tube.

5. FIRE FIGHTING MEASURES

FLASH POINT AND METHOD : 83 degrees Fahrenheit Tagliabue Closed Cup (TCC)

FLAMMABLE LIMITS : 1.7% to 12.8%

AUTOIGNITION TEMPERATURE : No data available.

GENERAL HAZARD : Carbon monoxide and unidentified organic compounds may be formed during combustion.

EXTINGUISHING MEDIA : Use water fog, "alcohol" foam, dry chemical, or CO2.

FIRE FIGHTING PROCEDURES : WARNING! Flammable Liquid. Clear the fire area of unprotected personnel. Do not enter confined fire space without full bunker gear; including a positive pressure NIOSH approved SCBA. Cool fire exposed containers with water. If water is used, fog nozzles are preferred

EXPLOSION HAZARDS : When heated above the flash point, this material emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mists or sprays may be flammable at temperatures below the flash point.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES : WARNING. Flammable. Ventilate area of leak or spill for at least 24 hours or until it has been declared safe. Remove all sources of ignition. Stop the leak if there is no risk involved. Clean-up personnel require protective clothing and respiratory protection from vapors. Absorb liquid with inert material. Only specially trained or qualified personnel should handle the emergency.

ENVIRONMENTAL PRECAUTIONS

WATER SPILL : Keep material out of storm sewers and ditches which lead to waterways.

LAND SPILL : Contact applicable authorities and determine applicable regulations based on MSDS information.

AIR RELEASE : Contact applicable authorities and determine applicable regulations based on MSDS information.

7. HANDLING AND STORAGE

GENERAL PROCEDURES : Keep away from heat, sparks, and flame. Surfaces that are hot may ignite liquid even in the absence of sparks or flame. Extinguish pilot lights, cigarettes, and turn off all other sources of ignition prior to use, and until all vapors are gone. Keep containers tightly closed and upright to prevent leakage.

COMMENTS : KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES :

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

CHEMICAL NAME	EXPOSURE LIMITS				
		OSHA PEL		ACGIH TLV	
		ppm	mg/m_3	ppm	mg/m_3
Methyl n-Amyl Ketone	TWA	100	465	100	465
	STEL	NL	NL	NL	NL
Talc	TWA	N/A	20 mppcf	N/A	2
	STEL	N/A	NL	N/A	NL
Acetone	TWA	1000	2400	250	590
	STEL	NL	NL	NL	NL
Acetic Acid Ethyl Ester	TWA	400	1400	400	1400
	STEL	NL	NL	NL	NL
Butyl Acetate	TWA	150	710	150	710
	STEL	NL	NL	200	950
Carbon Black	TWA	N/A	3.5	N/A	3.5
	STEL	N/A	NL	N/A	NL

OSHA TABLE COMMENTS:
NL = Not Listed

Ca = "WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM."

ENGINEERING CONTROLS: Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

SKIN: Wear resistant gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

RESPIRATORY: If exposure may or does exceed occupational exposure limits (Section 8) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134, use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

HYGIENIC WORK PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

COMMENTS: May be harmful or fatal if swallowed. May irritate body tissues. Use with adequate ventilation. Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE : Liquid
ODOR : Typical paint odor.
pH : Not Applicable
BOILING POINT : 133 Degrees Fahrenheit to 244 Degrees Fahrenheit
FREEZING POINT : No data available
VOLATILE ORGANIC COMPOUNDS: 280 G/L (2.34 Lbs/Gal)
(VOC Theoretical – As Packaged)
HAZARDOUS AIR POLLUTANTS (HAP's): 0 G/L (0.00 Lbs/Gal)
(HAP's Theoretical – As Packaged)
SOLUBILITY IN WATER : Soluble in most organic solvents. Not soluble in water.
EVAPORATION RATE : No data available
DENSITY : 8.60 (Lbs/Gal)

10. STABILITY AND REACTIVITY

STABLE : Yes

HAZARDOUS POLYMERIZATION : Will not occur

CONDITIONS TO AVOID : Avoid heat, sparks, flame and contact with strong oxidizing agents. Prevent vapor accumulation.

POLYMERIZATION : Avoid heat, flame, and other sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and unidentified organic compounds may be formed during combustion.

INCOMPATIBLE MATERIALS : Strong oxidizers.

11. TOXICOLOGICAL INFORMATION

GENERAL COMMENTS: None identified.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Keep out of waterways.

13. DISPOSAL INFORMATION

DISPOSAL METHOD: This material is a US EPA defined ignitable hazardous waste. The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

EMPTY CONTAINER: KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

RCRA/EPA WASTE INFORMATION: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME : UN1263, Paint, Class 3, PG III
(UN#, Proper Shipping Name, Class, Packing Group)

***** The manufacturer verifies that the material was supplied and shipped in the proper packages in accordance with DOT and federal regulations that are applicable to the mode of transportation selected. The shipper must verify that the packaging supplied is acceptable to be re-shipped in per the federal regulations applicable to the mode of transportation for re-shipment. Regulations may change depending on mode of transportation selected.*****

15. REGULATORY INFORMATION

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES: This product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard, and a fire hazard.

MIL-PRF-85285E Ty.I Cl.H #35109 Blue Polyurethane

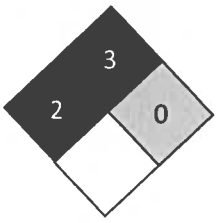
FIRE : Yes **PRESSURE GENERATING :** No
REACTIVITY : No **ACUTE :** Yes **CHRONIC :** Yes
313 REPORTABLE INGREDIENTS: To the best of our knowledge, this product is not listed as a toxic chemical.

302/304 EMERGENCY PLANNING
EMERGENCY PLAN: To the best of our knowledge, this material is not listed as an extremely hazardous substance.

16. OTHER INFORMATION

HMIS RATING	
Health :	2
Flammability :	3
Reactivity :	0
Personal Protection :	G

NFPA CODES



MANUFACTURER DISCLAIMER : To the best of Chemsol's knowledge, all information, recommendations, and suggestions appearing herein concerning this product are taken from sources or based upon data believed to be reliable. Although reasonable care has been taken in the preparation of this information, Chemsol extends no warranties or guarantees, express or implied, makes no representations and assumes no responsibility as to the accuracy, reliability or completeness of the information presented. Chemsol assumes no liability arising out of the use of the product by others.

The conditions or methods of handling, storage, use and disposal of the product are beyond Chemsol's control. The information provided herein may not be valid for this product if it is used in combination with any other materials or process. It is the user's responsibility to determine the suitability of the product, review the information provided herein, assess the safety and toxicity of the product and to comply with all applicable laws and regulations. For this and other reasons, Chemsol does not assume responsibility and expressly disclaims liability for any loss damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

SAFETY DATA SHEET (SDS)

CHEMSOL

Your Chemical Solutions Provider

Multiple KITS
CM85285IHC

DATE ISSUED :	1/3/2019

MIL-PRF-85285E Ty. I Cl. H Catalyst (1:1 Mix)

1. PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: MIL-PRF-85285E Ty. I Cl. H Catalyst (1:1 Mix)

SELLERS INFORMATION
Chemsol
12944 Farmington Road
Livonia, MI 48150
Phone: (734)429-0033

24 HR. EMERGENCY TELEPHONE NUMBER
CHEMTREC (US Transportation): 1(800)424-9300
CHEMTREC (International Transportation): +1(703)741-5970

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Hazard Classification : Flammable Liquid, Category 2
Acute Toxicity (Oral), Category 4
Eye Damage/Irritation, Category 2
Skin Corrosion/Irritation, Category 2
Sensitization - Skin, Category 1
Sensitization - Respiratory, Category 1
Specific Target Organ Toxicity (Single Exposure - Respiratory Tract Irritation, Narcosis), Category 3
Specific Target Organ Toxicity (Repeated Exposure), Category 2

PHYSICAL APPEARANCE : Liquid
IMMEDIATE CONCERNS : DANGER! Flammable liquid and vapor. May cause eye, skin and respiratory tract irritation. May cause asphyxiation, or brain, lung or other organ injury if inhaled, swallowed or absorbed by the skin.
HAZARDOUS WARNING LABEL: DANGER! FLAMMABLES! Highly flammable liquid and vapour.
Harmful if swallowed.
Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause respiratory sensitization.
May cause drowsiness and dizziness.

MIL-PRF-85285E Ty. I Cl. H Catalyst (1:1 Mix)

May cause damage to organs through prolonged or repeated exposure.

PRECAUTIONARY STATEMENTS: Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only nonsparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

POTENTIAL HEALTH EFFECTS

EYES : Liquid is severely irritating to the eyes. High vapor concentrations are also irritating.
SKIN : Liquid is moderately irritating to the skin. Prolonged or repeated contact can result in drying of the skin which may result in skin irritation and dermatitis (rash). Liquid may be absorbed through the skin.
INGESTION : Ingestion may cause headache, dizziness, fatigue, and central nervous system depression along with gastrointestinal disturbances.
INHALATION : Vapors may be irritating to the nose, throat, and respiratory tract. Exposure to high vapor concentrations may cause central nervous system (CNS) depression. Aspiration of liquid may cause pneumontitis, pulmonary edema, and hemorrhaging.
CHRONIC : No chronic health concerns known.
CARCINOGENICITY : This material is not currently known to have carcinogenic properties.
MUTAGENICITY : This material is not know to have mutagenic effects on genetic material.
IRRITANCY: This material may cause irritation to the eyes, skin, and respiratory tract. Use correct PPE when handling this material.

REPRODUCTIVE TOXICIITY

REPRODUCTIVE EFFECTS : This material is not known to cause any reproductive system damage.
TERATOGENIC EFFECTS : This material is not known to contain any teratogenic substances.

3. COMPOSITION/CHEMICAL INFORMATION

Chemical Name	CAS Number	Weight %
Butyl Acetate	123-86-4	25% to 50%
*Hexane, 1,6-Diisocyanato-, Homopolymer	28182-81-2	25% to 50%
Acetone	67-64-1	20% to 25%
*Xylenes, Mixed Isomers	1330-20-7	5% to 10%

* Toxic chemical subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

4. FIRST AID MEASURES

EYES : Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Seek medical aid if irritation persists.

SKIN : Flush skin with soap and water while removing contaminated clothing. If irritation occurs, seek immediate medical attention. Do not reuse clothing or shoes until thoroughly cleaned.

INGESTION : Do not induce vomiting, and seek immediate medical attention. Do not attempt to give any liquids if victim is unconscious.

INHALATION : Immediately remove victim to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Seek immediate medical attention.

NOTES TO PHYSICIAN: If the victim is a child, give no more than 1 glass of water and 15cc (1 tablespoon) syrup of ipecac. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage should be considered following intubation with a cuffed endotracheal tube.

5. FIRE FIGHTING MEASURES

FLASH POINT AND METHOD : 70 degrees Fahrenheit Tagliabue Closed Cup (TCC)

FLAMMABLE LIMITS : 1.0% to 12.8%

AUTOIGNITION TEMPERATURE : No data available.

GENERAL HAZARD : Carbon monoxide and unidentified organic compounds may be formed during combustion.

EXTINGUISHING MEDIA : Use water fog, "alcohol" foam, dry chemical, or CO2.

FIRE FIGHTING PROCEDURES : WARNING! Flammable Liquid. Clear the fire area of unprotected personnel. Do not enter confined fire space without full bunker gear; including a positive pressure NIOSH approved SCBA. Cool fire exposed containers with water. If water is used, fog nozzles are preferred

EXPLOSION HAZARDS : When heated above the flash point, this material emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mists or sprays may be flammable at temperatures below the flash point.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES : WARNING. Flammable. Ventilate area of leak or spill for at least 24 hours or until it has been declared safe. Remove all sources of ignition. Stop the leak if there is no risk involved. Clean-up personnel require protective clothing and respiratory protection from vapors. Absorb liquid with inert material. Only specially trained or qualified personnel should handle the emergency.

MIL-PRF-85285E Ty. I Cl. H Catalyst (1:1 Mix)

ENVIRONMENTAL PRECAUTIONS

WATER SPILL : Keep material out of storm sewers and ditches which lead to waterways.

LAND SPILL : Contact applicable authorities and determine applicable regulations based on MSDS information.

AIR RELEASE : Contact applicable authorities and determine applicable regulations based on MSDS information.

7. HANDLING AND STORAGE

GENERAL PROCEDURES : Keep away from heat, sparks, and flame. Surfaces that are hot may ignite liquid even in the absence of sparks or flame. Extinguish pilot lights, cigarettes, and turn off all other sources of ignition prior to use, and until all vapors are gone. Keep containers tightly closed and upright to prevent leakage.

COMMENTS : KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES :

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

CHEMICAL NAME	EXPOSURE LIMITS				
		OSHA PEL		ACGIH TLV	
		ppm	mg/m3	ppm	mg/m3
Butyl Acetate	TWA	150	710	150	710
	STEL	NL	NL	200	950
*Hexane, 1,6-Diisocyanato-, Homopolymer	TWA	NL	NL	0.01	0.11
	STEL	NL	NL	NL	NL
Acetone	TWA	1000	2400	250	590
	STEL	NL	NL	NL	NL
*Xylenes, Mixed Isomers	TWA	100	435	100	435
	STEL	NL	NL	150	635

OSHA TABLE COMMENTS:
NL = Not Listed
Ca = "WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM."

ENGINEERING CONTROLS: Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

SKIN: Wear resistant gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

RESPIRATORY: If exposure may or does exceed occupational exposure limits (Section 8) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134, use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

HYGIENIC WORK PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

COMMENTS: May be harmful or fatal if swallowed. May irritate body tissues. Use with adequate ventilation. Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE : Liquid
ODOR : Typical paint odor.
pH : Not Applicable
BOILING POINT : 244 Degrees Fahrenheit to 280 Degrees Fahrenheit
FREEZING POINT : No data available
VOLATILE ORGANIC COMPOUNDS: 412 G/L (3.43 Lbs/Gal)
(VOC Theoretical – As Packaged)
HAZARDOUS AIR POLLUTANTS (HAP's): 105 G/L (0.88 Lbs/Gal)
(HAP's Theoretical – As Packaged)
SOLUBILITY IN WATER : Soluble in most organic solvents. Not soluble in water.
EVAPORATION RATE : No data available
DENSITY : 7.72 (Lbs/Gal)

10. STABILITY AND REACTIVITY

STABLE : Yes

HAZARDOUS POLYMERIZATION : Will not occur

CONDITIONS TO AVOID : Avoid heat, sparks, flame and contact with strong oxidizing agents. Prevent vapor accumulation.

POLYMERIZATION : Avoid heat, flame, and other sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and unidentified organic compounds may be formed during combustion.

INCOMPATIBLE MATERIALS : Strong oxidizers.

11. TOXICOLOGICAL INFORMATION

MIL-PRF-85285E Ty. I Cl. H Catalyst (1:1 Mix)

GENERAL COMMENTS: None identified.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Keep out of waterways.

13. DISPOSAL INFORMATION

DISPOSAL METHOD: This material is a US EPA defined ignitable hazardous waste. The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

EMPTY CONTAINER: KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

RCRA/EPA WASTE INFORMATION: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)
PROPER SHIPPING NAME : UN1263, Paint, Class 3, PG II
(UN#, Proper Shipping Name, Class, Packing Group)

***** The manufacturer verifies that the material was supplied and shipped in the proper packages in accordance with DOT and federal regulations that are applicable to the mode of transportation selected. The shipper must verify that the packaging supplied is acceptable to be re-shipped in per the federal regulations applicable to the mode of transportation for re-shipment. Regulations may change depending on mode of transportation selected.*****

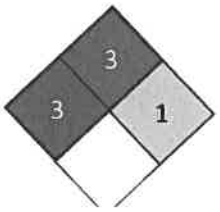
15. REGULATORY INFORMATION

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)
311/312 HAZARD CATEGORIES: This product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard, and a fire hazard.
FIRE : Yes **PRESSURE GENERATING :** No
REACTIVITY : No **ACUTE :** Yes **CHRONIC :** Yes
313 REPORTABLE INGREDIENTS: To the best of our knowledge, this product is not listed as a toxic chemical.

302/304 EMERGENCY PLANNING
EMERGENCY PLAN: To the best of our knowledge, this material is not listed as an extremely hazardous substance.

16. OTHER INFORMATION

NFPA CODES



MIL-PRF-85285E Ty. I Cl. H Catalyst (1:1 Mix)

HMIS RATING	
Health :	3
Flammability :	3
Reactivity :	1
Personal Protection :	G

MANUFACTURER DISCLAIMER : To the best of Chemsol's knowledge, all information, recommendations, and suggestions appearing herein concerning this product are taken from sources or based upon data believed to be reliable. Although reasonable care has been taken in the preparation of this information, Chemsol extends no warranties or guarantees, express or implied, makes no representations and assumes no responsibility as to the accuracy, reliability or completeness of the information presented. Chemsol assumes no liability arising out of the use of the product by others.

The conditions or methods of handling, storage, use and disposal of the product are beyond Chemsol's control. The information provided herein may not be valid for this product if it is used in combination with any other materials or process. It is the user's responsibility to determine the suitability of the product, review the information provided herein, assess the safety and toxicity of the product and to comply with all applicable laws and regulations. For this and other reasons, Chemsol does not assume responsibility and expressly disclaims liability for any loss damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.