#1 Heilman Avenue
Willow Island, WV 26134
(304) 665-2422

February 4, 2016

Overnight Delivery
Federal Express

Mr. William Durham, Director
Division of Air Quality, DEP
601 57th Street, S.E.
Charleston, WV 25304

CYTEC INDUSTRIES INC.
WILLOW ISLAND PLANT
WVDAQ ID NO. 073-00003

SUBJECT: COMBINED APPLICATION FOR RULE 13 / TITLE V PERMIT UPDATES

REFERENCE: PERMIT R13-2156W, Issued October 16, 2015
PERMIT R30-7300003-2010; MM09 (Part 4 of 4), (January 14, 2015)

Dear Director Durham:

In accordance with 45 CSR 13 Section 4.2 and 45 CSR 30 Section 6.5.a., Cytec hereby submits a combined application for updates to the Polymer Additives Manufacturing Unit Rule 13 permit (R13-2156W) and Rule 30 permit R30-7300003-2010; MM09 (Part 4 of 4) at the Willow Island site.

Pursuant to R13-2156W, Section 4.5.5, Cytec is submitting a Class I Administrative Update for 2nd half 2015. No changes to emission limits are proposed by this permitting action.

Cytec Industries Inc. has reviewed Draft TITLE V OPERATING PERMIT REVISIONS GUIDANCE PROCEDURES AND INSTRUCTIONS (2/18/04) issued by DAQ and requests minor permit modification of the referenced Title V permit. Cytec is submitting this proposed modification to the referenced Title V permit which we believe meets the criteria for use of minor permit modification procedures, and hereby request that such procedures be utilized in making this modification.

An original, one copy and 2 CD's of the application are enclosed for Rule 13/Title V processing.

A Table of Contents is provided with this submittal, listing all information presented in this application for update.

Cytec has included for DAQ's use, as Appendix 2, a Summary of Revisions (see Attachment 1) and a source-proposed 'track changes' version of the permit (see Attachment 2).

No confidential business information is included in this application.

Cytec appreciates the opportunity to review a draft permit at the appropriate point in the update process. We also request an electronic 'final draft' version in Microsoft Word format as submitted to the Director for signature, representing the "as issued" permit.

Additional questions or information can be obtained by contacting our technical representative Mr. Jason Canterbury at (304) 665-3668.

Sincerely yours,
Cytec Industries Inc.

Mr. Michael A. Young
Plant Manager

MAY/jp

Enclosures

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WEST VIRGINIA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.wvdep.org/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 Permit 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):*
Cytec Industries Inc.

2. Federal Employer ID No. ***(FEIN):***
223268660

3. Name of facility *(if different from above):*
Cytec – Willow Island Plant

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

5A. Applicant's mailing address:
Cytec Industries Inc.
#1 Heilman Avenue
Willow Island, WV 26134

5B. Facility's present physical address:
Cytec Industries Inc.
State Route 2
Willow Island, WV 26134

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: Not Applicable (NA)

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: The site is existing.
- 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.):
Chemical Manufacturing Unit – Polymer Additives Production

10. North American Industry Classification System (**NAICS**) code for the facility:
325199

11A. DAQ Plant ID No. (for existing facilities only):
073–00003

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R13-2156W (October 16, 2015)
R30-7300003-2010; MM09 (Part 4 of 4), (January 14, 2015)

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**.

The plant is located on State Route 2, two miles south of Belmont, West Virginia.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
NA	Willow Island	Pleasants
12.E. UTM Northing (KM): 4,356.2	12F. UTM Easting (KM): 473.4	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:
Per permit Section 4.5.5., semiannual update of Section 1.0 equipment list.

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

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). NA (on-going operations)

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
24 Hours Per Day 7 Days Per Week 52 Weeks Per Year

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	☐ Haul Road Emissions	☐ Quarry
☐ Chemical Processes	☐ Hot Mix Asphalt Plant	☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Concrete Batch Plant	☐ Incinerator	
☐ Grey Iron and Steel Foundry	☐ Indirect Heat Exchanger	☐ Storage Tanks

☒ General Emission Unit, specify: Reactor – 14HX (like-kind replacement for existing reactor)

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	☐ Baghouse	☐ Flare
☐ Adsorption Systems	☐ Condenser	☐ Mechanical Collector
☐ Afterburner	☐ Electrostatic Precipitator	☐ 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 Partnership
☐ Authority of Governmental Agency	☐ 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: 02 / 04 / 2016
(Please use blue ink) *(Please use blue ink)*

35B. Printed name of signee: Michael A. Young		35C. Title: Plant Manager
35D. E-mail: mike.young@cytec.com	36E. Phone: (304) 665-3461	36F. FAX: (304) 665-3616
36A. Printed name of contact person (if different from above): Jason Canterbury		36B. Title: Environmental Engineer III
36C. E-mail: jason.canterbury@cytec.com	36D. Phone: (304) 665-3668	36E. FAX: (304) 665-3674

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.

Attachment A

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION
CERTIFICATE

ISSUED TO:
CYTEC INDUSTRIES INC
STATE RT 2
WILLOW ISLAND, WV 26134-0000

BUSINESS REGISTRATION ACCOUNT NUMBER: **1012-6978**

This certificate is issued on: **08/16/2011**

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.

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ATTACHMENT D – REGULATORY DISCUSSION

NOTE: The following discussion contains the specific Clean Air Act regulatory changes that Cytec believes to apply to the requested R13 permit and Title V permit update.

Presumed Applicable CAA Requirements

Regulatory Citation	Emission Source Affected	Description of Applicability	Compliance Demonstration
45CSR13	UHX-2000 and UHX-3000 products	The new UHX-2000 and UHX-3000 process emits a very small quantity of volatile organic compounds (VOC). The UHX-2000 and UHX-3000 process will be added to R13-2156X. Note that since the new UHX-2000 and UHX-3000 process does not utilize nor emit any hazardous air pollutant, no MACT rules applies to this process.	The existing R13-2156W permit's monitoring, recordkeeping and reporting requirements are adequate to ensure compliance with all applicable requirements.

Attachment G
Process Description

POLYMER ADDITIVES MANUFACTURING UNIT PROCESS DESCRIPTION

The Cytec Willow Island (Cytec-WI) plant's Polymer Additives Manufacturing Unit manufactures ultraviolet light absorbers, antioxidants, anti-static agents, depressant reagents and phenolic resins.

In accordance with R13-2156W, Section 4.5.5, Cytec is submitting notification of revisions of the Building 82 Manufacturing Unit equipment/emission units, control devices, or emissions points, as listed in Sections 1.0 of this permit, for the 2nd half of 2015. No changes to emission limits are proposed by this permitting action.

New Product/Process Area UHX-2000 and UHX-3000

Cytec-WI added the new product UHX-2000 and UHX-3000 to its Polymer Additives manufacturing business within Building 82, utilizing existing process equipment, as follows:

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
20EX	20EE	Condensate Receiver (3-20T1)	--	--	NA
20FX	20DE	Vacuum Jet (3-19VJ1)	--	--	NA
20LX	20AE	Splitter Bowl (2-19SB1)	--	--	NA
20NX	20AE	Strip Kettle (2-19K2) with Condensers 3-20CD1 & 3-20CD1A	--	--	NA
20PX	20PE	Split Receiver (1-20T1)	--	--	NA
21DX	21DE	Industrial hygiene hood over Reactor 21DX	--	--	NA
	20BE	Reactor (2-20K1) with Condensers 3-22CD1 & 3-22CD1A	--	--	NA
22KX	20BE	Splitter Bowl (2-20SB1)	--	--	NA
24TX	24FE	Drumming Station (1-24D1)	--	--	NA

Per R13-2156W Section 4.1.5, compliance with the emission limits set forth in Section 4.1.1 are demonstrated by calculating emissions for every product in the Building 82 Manufacturing Unit using Emission Master® emission modeling software, or other appropriate emission/discharge estimation models or calculation methodologies (e.g., ChemCAD®, PlantWare®, USEPA's TANKS 4.0, etc.). The emission models and other calculation methods are maintained current for all processes, process modifications and new product variants. The emission/discharge estimation models and calculation methodologies developed in Section 4.1.3, as well as production records for each calendar month are maintained on site for a period of five (5) years.

MSDSs for UHX-2000 and UHX-3000 are included in Attachment H.

Attachment G
Process Description

The new UHX-2000 and UHX-3000 manufacturing process is not subject to the Miscellaneous Organic NESHAP (MON MACT) Subpart FFFF because the process does not utilize nor emit any hazardous air pollutant.

The new UHX-2000 and UHX-3000 manufacturing process emits a trivial quantity of dilute sodium hydroxide (<0.008 lb/hr and <1.5 lb/yr). Cytec believes this extremely low emission rate of PM is not subject to 45CSR7-4.1 because of the exemption listed in 45CSR7-10.5:

10.5. The owner or operator of a manufacturing process shall be exempt from subsection 4.1 for source(s) of emissions that have a potential to emit less than one (1) pound per hour of particulate matter and an aggregate of less than one thousand (1000) pounds per year for all such sources of particulate matter located at the stationary source. Particulate matter, for the purposes of this subsection, will not include particulate matter classified as hazardous air pollutants pursuant to 42 U.S.C. '7412(b).

Attachment H – Material Safety Data Sheets (MSDS)

- **UHX2000 S-11092**
- **UHX3000 S-11093**

SDS: 0060143
Date Prepared: 10/05/2015

SAFETY DATA SHEET

1. IDENTIFICATION

Product Name:	**S-11092** [UHX2000]
Product Description:	Modified polyacrylamide in water-in-oil emulsion
Synonyms:	None
Chemical Family:	Modified Polyacrylamide
Molecular Formula:	Mixture
Molecular Weight:	Mixture
Intended/Recommended Use:	Flocculant

CYTEC INDUSTRIES INC., FIVE GARRET MOUNTAIN PLAZA, WOODLAND PARK, NEW JERSEY 07424, USA
For Product and all Non-Emergency Information call 1-800/652-6013. Outside the USA and Canada call 1-973/357-3193.

EMERGENCY PHONE (24 hours/day) - For emergency only involving spill, leak, fire, exposure or accident call:
Asia Pacific:
Australia - +61-3-9663-2130 or 1800-033-111 (IXOM)
China (PRC) - +86 0532 83889090 (NRCC)
New Guinea - +61-3-9663-2130 or 1800-033-111
New Zealand - +61-3-9663-2130 or 0800-734-607 (IXOM)
India, Japan, Korea, Malaysia, Thailand - +65 3158 1074 (Carechem24 Singapore)
India (Hindi Speaking Only) - +65 3158 1198 or 000800 100 7479 (Carechem24 Singapore)
Canada: +1-905-356-8310 (Cytec Welland, Canada plant)
Europe/Africa/Middle East (Carechem24 UK):
Europe, Middle East, Africa, Israel - +44 (0) 1235 239 670
(Arabic speaking countries) - +44 (0) 1235 239 671
Latin America:
Brazil - 0800 7077 022 (SUATRANS)
Chile - +56-2-2-247-3600 (CITUC QUIMICO)
All Others - +52-376-73 74122 (Cytec Atequiza, Mexico plant)
USA: +1-703-527-3887 or 1-800-424-9300 (CHEMTREC #CCN6083)

2. HAZARDS IDENTIFICATION

GHS Classification
Skin Corrosion / Irritation Hazard Category 1B
Serious Eye Damage / Eye Irritation Hazard Category 1
Aquatic Environment Acute Hazard Category 2
Aquatic Environment Chronic Hazard Category 3

LABEL ELEMENTS

Signal Word
Danger

Hazard Statements
Causes severe skin burns and eye damage
Toxic to aquatic life
Harmful to aquatic life with long lasting effects

Precautionary Statements
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid release to the environment.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor/physician.
Specific treatment (see supplemental first aid instructions on this label).
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Store locked up.
Dispose of contents/container in accordance with local and national regulations.

Hazards Not Otherwise Classified (HNOC), Other Hazards
Spills are very slippery.
Use mechanical exhaust ventilation when heat-curing material.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance, Mixture or Article? Mixture

HAZARDOUS INGREDIENTS

Component / CAS No.	%	GHS Classification	Carcinogen
Petroleum distillate hydrotreated light 64742-47-8	20-25	Flam. Liq. 4 (H227) Skin Irrit. 3 (H316) Eye Irrit. 2B (H320) Asp. Tox. 1 (H304)	-
Naphtha (petroleum), hydrotreated heavy; low boiling point thermally cracked naphtha 64742-48-9	1.0-3.0	Flam. Liq. 3 (H226) Skin Irrit. 3 (H316) Eye Irrit. 2B (H320) Asp. Tox. 1 (H304)	-
Ammonium hydroxide 1336-21-6	1.0-2.0	Skin Corr. 1B (H314) Eye Dam. 1 (H318) Aquatic Acute 1 (H400)	-
Ethoxylated oleyl amine 26635-93-8	1.0-1.5	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Skin Corr. 1C (H314) STOT Single 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	-
Nonylphenol, branched, ethoxylated 127087-87-0	<1	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Eye Dam. 1 (H318) Aquatic Acute 2 (H401) Aquatic Chronic 2 (H411)	-

Component / CAS No.	%	GHS Classification	Carcinogen
Sodium hydroxide 1310-73-2	0.3-1.0	Met. Corr. 1 (H290) Skin Corr. 1A (H314) Eye Dam. 1 (H318)	-

The specific chemical identity and/or exact percentage of composition for one or more ingredients has been withheld as a trade secret.

Additional GHS classification or other information may be included in this section but has not been adopted by OSHA. See Section 16 for full text of H phrases.

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4. FIRST AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

Eye Contact:
Rinse immediately with plenty of water for at least 15 minutes. Obtain medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes without delay. Wash immediately with plenty of water. Do not reuse contaminated clothing without laundering. Get medical attention if pain or irritation persists after washing or if signs and symptoms of overexposure appear.

Ingestion:
If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Inhalation:
Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

None known

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDS

Not applicable

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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:
Use water spray or fog, carbon dioxide or dry chemical.

Extinguishing Media to Avoid:
full water jet

Protective Equipment:
Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).

Special Hazards:
Keep containers cool by spraying with water if exposed to fire.

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6. ACCIDENTAL RELEASE MEASURES

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. In addition to the protective clothing/equipment in Section 8 (Exposure Controls/Personal Protection), wear impermeable boots.

Methods For Cleaning Up:
Product may cause a slip hazard. Spilled material should be absorbed onto an inert material and scooped up. Flush spill area with water. If slipperiness remains apply more dry-sweeping compound.

References to other sections:
See Sections 8 and 13 for additional information.

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7. HANDLING AND STORAGE

HANDLING

Precautions: Wash hands thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Avoid release to the environment. Do not breathe vapors or spray mist.

Special Handling Statements: Provide good ventilation of working area (local exhaust ventilation if necessary). Containers must be bonded and grounded when pouring or transferring material. This material contains a small amount of flammable or combustible liquid and vapor. Keep away from heat, sparks, and flame.

STORAGE
Store in accordance with local, state, and federal regulations.

Storage Temperature: Store at 5 - 40 °C 41 - 104 °F
Reason: Quality.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:
Utilize a closed system process where feasible. Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

Respiratory Protection:
Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

Eye Protection:
Prevent eye and skin contact. Provide eye wash fountain and safety shower in close proximity to points of potential exposure. Wear eye/face protection such as chemical splash proof goggles or face shield.

Skin Protection:
Prevent contamination of skin or clothing when removing protective equipment. Wear impermeable gloves and suitable protective clothing.

Hand Protection:
Wear impermeable gloves. Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility etc) is noticed.

Additional Advice:
Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

Exposure Limit(s)

The below constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

1310-73-2 Sodium hydroxide

OSHA (PEL):	2 mg/m^3 (TWA)
ACGIH (TLV):	2 mg/m^3 (Ceiling)
Other Value:	Not established

1336-21-6 Ammonium hydroxide

OSHA (PEL):	50 ppm
ACGIH (TLV):	Not established
Other Value:	Not established

64742-47-8 Petroleum distillate hydrotreated light

OSHA (PEL):	165 ppm (1200 mg/m^3) (Supplier)
ACGIH (TLV):	Not established
Other Value:	1200 mg/m^3 (Supplier) 165 ppm (Supplier)

64742-48-9 Naphtha (petroleum), hydrotreated heavy; low boiling point thermally cracked naphtha

OSHA (PEL):	1200 mg/m^3 (Supplier)
ACGIH (TLV):	Not established
Other Value:	1200 mg/m^3 (Supplier)

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	gray
Appearance:	viscous liquid
Odor:	ammonia
Boiling Point:	Similar to water
Melting Point:	Not available
Vapor Pressure:	Similar to water
Specific Gravity/Density:	1.12
Vapor Density:	Similar to water
Percent Volatile (% by wt.):	59.0 - 64.5
pH:	14.0
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	Not available
Solubility In Water:	Limited by viscosity
Volatile Organic Content:	2.1 lbs/gal
Flash Point:	No flash up to boiling point.
Flammability (solid, gas):	Not available
Flammable Limits (% By Vol):	Not available
Autoignition (Self) Temperature:	Not available
Decomposition Temperature:	Not available
Partition coefficient (n-octanol/water):	Not available
Odor Threshold:	Not available
Viscosity (Kinematic):	Not available

10. STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: None known

Polymerization: Will not occur

Conditions To Avoid: None known

Materials To Avoid:	Strong acids
Hazardous Decomposition Products:	Ammonia (NH3) Carbon dioxide Carbon monoxide (CO) Oxides of nitrogen sulfur dioxide

11. TOXICOLOGICAL INFORMATION

PRODUCT TOXICITY INFORMATION

Likely Routes of Exposure: Oral, Eyes, Skin.

ACUTE TOXICITY DATA

oral	rat	Acute LD50	>2000 mg/kg
dermal	rabbit	Acute LD50	>2000 mg/kg
inhalation	rat	Acute LC50 4 hr	>5 mg/l (Dust/Mist)

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	skin	Corrosive
Acute Irritation	eye	Causes serious damage

ALLERGIC SENSITIZATION

Sensitization	skin	Not sensitizing
Sensitization	respiratory	No data

GENOTOXICITY

Assays for Gene Mutations

Ames Salmonella Assay	No data

OTHER INFORMATION

The product toxicity information above has been estimated.

HAZARDOUS INGREDIENT TOXICITY DATA

Petroleum distillates, hydrotreated light (CAS# 64742-47-8) has acute oral (rat) and dermal (rabbit) LD50 values of >5 g/kg and >3.16 g/kg, respectively. Prolonged or repeated skin contact tends to remove skin oils, possibly leading to irritation and dermatitis. Direct contact may cause eye irritation. Overexposure to high vapor concentrations, >~700 ppm, are irritating to the eyes and respiratory tract and may cause headaches, dizziness, drowsiness, and other central nervous system effects, including death. Aspiration of minute amounts during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death. In a 90-day oral gavage (rats) study at 100, 500, or 1000 mg/kg, no treatment-related mortalities were observed. There were no significant changes in body weights or food consumption in any dose groups. Increased liver weights were observed in male and female rats a 500 and 1000 mg/kg. Increased kidney weights were observed only in male rats at 500 and 1000 mg/kg. Testes weights were significantly elevated in male rats at 1000 mg/kg. Kidney effects, indicative of light hydrocarbon nephropathy, occured in male rat kidneys at all dose levels. Histological findings of hepatocellular hypertrophy were seeen in the livers of male rats at 1000 mg/kg and in female rats at 500 and 1000 mg/kg. All treatment-related effects were reversible within the 4-week recovery period. Observed kidney effects (including light hydrocarbon nephropathy and increased kidney weight) are a unique response by male rats to chronic hydrocarbon exposure, which th U.S. EPA has declared `not relevant to humans`. High-dose liver effects (including hepatocellular hypertrophy, or enlarged liver cells) are a direct consequence of the sustained high-fat `hydrocarbon diet`. The No Observed Adverse Effect Level (NOAEL) for this study was 1000 mg/kg.

Acute overexposure to petroleum distillate vapor may cause eye and throat irritation. Certain petroleum distillate fractions may produce moderate to severe skin irritation with direct contact. Prolonged repeated exposure to petroleum distillate vapor may cause central nervous system damage as well as heart and blood disorders. The oral LD50 in the rat for various distillates ranges from 4.5 to greater than 25 ml/kg, and the inhalation LC50 in rats is about 15000 ppm. Aspiration of petroleum distillate may cause chemical pneumonitis. Overexposure to vapor may cause dizziness, drowsiness, headache and nausea.

Ammonia vapor can cause respiratory tract and eye irritation. Direct contact with ammonia solutions causes irreversible eye damage, mucous membrane swelling and skin burns. The LC50 in rats by inhalation after 1-hour exposure is 7338 ppm (1.27 mg/L). Single dose oral administration of ammonia solution to rats at 350 mg/kg produced no toxic effects.

Ethoxylated oleyl amine toxicological properties have not been fully investigated. It is reported to have an oral (rat) LD50 value of 1500 mg/kg. It is also reported to be severely irritating to eyes and skin. Inhalation exposure to mist/aerosol may cause severe respiratory irritation.

Based on a family of structurally similar substances, the acute oral (rat) LD50, acute dermal (rabbit) LD50 and acute inhalation 4-hr (rat - mist) LC50 values of Nonylphenol, branched, ethoxylated are estimated to be 960-3980 mg/kg, 2000->3000 mg/kg, and 1.15 m/L, respectively. Direct contact with this material is expected to cause severe eye irritation. Prolonged contact may cause slight skin irritation. This substance is not expected to be a dermal sensitizer. Exposure to vapors may cause irritation of the eyes, and upper respiratory tract (nose and throat). Repeated dose toxicity studies have shown some effects on the kidney and liver. This family of substances has produced negative results in In vitro genetic toxicity studies, did not cause cancer or birth defects in laboratory animals

Sodium hydroxide (NaOH) is corrosive to eyes, skin, and soft tissues of the digestive and respiratory tracts. Even dilute solutions of NaOH can produce irreversible damage to eyes and skin. Acute overexposure to NaOH mists or dusts causes severe respiratory irritation. NaOH is not a known skin or respiratory sensitizer. Fatal ingestion and fatal dermal exposure has been reported for humans. According to the OECD (2002), no valid animal data are available on repeated dose toxicity by the oral, dermal or inhalation routes. However, under normal, non-irritating handling and use conditions, exposure to NaOH is not expected to result in systemic availability and, therefore, harmful effects are not anticipated. NaOH is not known to cause reproductive or developmental toxicity. Both in vitro and in vivo genetic toxicity tests with NaOH indicated no evidence for mutagenic activity.

California Proposition 65 Warning (applicable in California only) - This product contains (a) chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

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12. ECOLOGICAL INFORMATION

TOXICITY, PERSISTENCE AND DEGRADABILITY, BIOACCUMULATIVE POTENTIAL, MOBILITY IN SOIL, OTHER ADVERSE EFFECTS

Overall Environmental Toxicity: Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

The ecological assessment for this material is based on an evaluation of its components.

RESULTS OF PBT AND vPvB ASSESSMENT
Not determined

HAZARDOUS INGREDIENT TOXICITY DATA

Component / CAS No.	Toxicity to Algae	Toxicity to Fish	Toxicity to Water Flea
Petroleum distillate hydrotreated light 64742-47-8	Not available	LC50 = 2.2 mg/L - Lepomis macrochirus (96h) static LC50 = 2.4 mg/L - Oncorhynchus mykiss (96h) static LC50 = 45 mg/L - Pimephales promelas (96h) flow-through	Not available
Naphtha (petroleum), hydrotreated heavy; low boiling point thermally cracked naphtha 64742-48-9	Not available	LC50 = 2200 mg/L - Pimephales promelas (96h)	Not available
Ammonium hydroxide 1336-21-6	Not available	LC50 = 8.2 mg/L - Pimephales promelas (96h)	EC50 = 0.66 mg/L - water flea (48h) EC50 = 0.66 mg/L - Daphnia pulex (48h)
Ethoxylated oleyl amine 26635-93-8	Not available	Not available	Not available
Nonylphenol, branched, ethoxylated 127087-87-0	Not available	LC50 = 1-10 mg/L - Fish (96h)	EC50 = 9-22 mg/L - Daphnia Magna (48h)
Sodium hydroxide 1310-73-2	Not available	LC50 = 45.4 mg/L - Oncorhynchus mykiss (96h) static	Not available

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicate if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 3 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Dangerous Goods? X

Proper Shipping Name: Corrosive liquid, n.o.s.
Hazard Class: 8
Packing Group: II
UN/ID Number: UN1760
Transport Label Required: Corrosive
Technical Name (N.O.S.): Ammonium hydroxide, Sodium hydroxide

TRANSPORT CANADA

Dangerous Goods? X
Proper Shipping Name: Corrosive liquid, n.o.s.
Hazard Class: 8
Packing Group: II
UN Number: UN1760
Transport Label Required: Corrosive
Technical Name (N.O.S.): Ammonium hydroxide, Sodium hydroxide

ICAO / IATA

Dangerous Goods? X
Proper Shipping Name: Corrosive liquid, n.o.s.
Hazard Class: 8
Packing Group: II
UN Number: UN1760
Transport Label Required: Corrosive
Technical Name (N.O.S.): Ammonium hydroxide, Sodium hydroxide

IMO

Dangerous Goods? X
Proper Shipping Name: Corrosive liquid, n.o.s.
Hazard Class: 8
UN Number: UN1760
Packing Group: II
Transport Label Required: Corrosive
Technical Name (N.O.S.): Ammonium hydroxide, Sodium hydroxide

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15. REGULATORY INFORMATION

Inventory Information

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: One or more components of this product are NOT included on the Canadian Domestic Substances List (DSL). These components are included on the Canadian Non-Domestic Substances List (NDSL).

European Economic Area (including EU): When purchased from a Cytec legal entity based in the EU, this product is compliant with the registration of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, pre-registered and/or registered.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.

China: One or more components of this product are NOT included on the Chinese (IECSC) inventory.

Japan: One or more components of this product are NOT included on the Japanese (ENCS) inventory.

Korea: One or more components of this product are NOT included on the Korean (ECL) inventory.

Philippines: One or more components of this product are NOT included on the Philippine (PICCS) inventory.

Taiwan: All components of this product are included on the Taiwan Chemical Substance Inventory (TCSI) or are not required to be listed on the Taiwan inventory.

OTHER ENVIRONMENTAL INFORMATION
The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

Component / CAS No.	%	TPQ (lbs)	RQ(lbs)	S313	TSCA 12B
Ammonium hydroxide 1336-21-6	1.0-2.0	None	1000	Yes(as Aqueous ammonia from water dissociable ammonium salts and other sources)	No

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA
- Acute

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16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)

Health: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

Fire: 1 - Materials that must be preheated before ignition can occur.

Instability: 0 - Materials that in themselves are normally stable, even under fire exposure conditions.

Reasons For Issue: Revised Section 1
Revised Section 7
Revised Section 15

Date Prepared: 10/05/2015
Date of last significant revision: 07/23/2015

Component Hazard Phrases
Petroleum distillate hydrotreated light
- H227 - Combustible liquid.
- H316 - Causes mild skin irritation.
- H320 - Causes eye irritation.
- H304 - May be fatal if swallowed and enters airways.

Naphtha (petroleum), hydrotreated heavy; low boiling point thermally cracked naphtha
- H226 - Flammable liquid and vapor.
- H316 - Causes mild skin irritation.
- H320 - Causes eye irritation.
- H304 - May be fatal if swallowed and enters airways.

Ammonium hydroxide
- H314 - Causes severe skin burns and eye damage.
- H400 - Very toxic to aquatic life.

Ethoxylated oleyl amine

H302 - Harmful if swallowed.
H318 - Causes serious eye damage.
H314 - Causes severe skin burns and eye damage.
H335 - May cause respiratory irritation.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

Nonylphenol, branched, ethoxylated

H302 - Harmful if swallowed.
H332 - Harmful if inhaled.
H318 - Causes serious eye damage.
H401 - Toxic to aquatic life.
H411 - Toxic to aquatic life with long lasting effects.

Sodium hydroxide

H290 - May be corrosive to metals.
H314 - Causes severe skin burns and eye damage.
H318 - Causes serious eye damage.

Prepared By: Legal & Compliance Services; E-mail: custinfo@cytec.com

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SDS: 0060144
Date Prepared: 11/23/2015

SAFETY DATA SHEET

1. IDENTIFICATION

Product Name:	**S-11093** [UHX3000]
Product Description:	Modified polyacrylamide in water-in-oil emulsion
Synonyms:	None
Chemical Family:	Modified Polyacrylamide
Molecular Formula:	Mixture
Molecular Weight:	Mixture
Intended/Recommended Use:	Flocculant

CYTEC INDUSTRIES INC., FIVE GARRET MOUNTAIN PLAZA, WOODLAND PARK, NEW JERSEY 07424, USA
For Product and all Non-Emergency Information call 1-800/652-6013. Outside the USA and Canada call 1-973/357-3193.

EMERGENCY PHONE (24 hours/day) - For emergency only involving spill, leak, fire, exposure or accident call:
Asia Pacific:
Australia - +61-3-9663-2130 or 1800-033-111 (IXOM)
China (PRC) - +86 0532 83889090 (NRCC)
New Guinea - +61-3-9663-2130 or 1800-033-111
New Zealand - +61-3-9663-2130 or 0800-734-607 (IXOM)
India, Japan, Korea, Malaysia, Thailand - +65 3158 1074 (Carechem24 Singapore)
India (Hindi Speaking Only) - +65 3158 1198 or 000800 100 7479 (Carechem24 Singapore)
Canada: +1-905-356-8310 (Cytec Welland, Canada plant)
Europe/Africa/Middle East (Carechem24 UK):
Europe, Middle East, Africa, Israel - +44 (0) 1235 239 670
(Arabic speaking countries) - +44 (0) 1235 239 671
Latin America:
Brazil - 0800 7077 022 (SUATRANS)
Chile - +56-2-2-247-3600 (CITUC QUIMICO)
All Others - +52-376-73 74122 (Cytec Atequiza, Mexico plant)
USA: +1-703-527-3887 or 1-800-424-9300 (CHEMTREC #CCN6083)

2. HAZARDS IDENTIFICATION

GHS Classification
Corrosive To Metal Hazard Category 1
Skin Corrosion / Irritation Hazard Category 1B
Serious Eye Damage / Eye Irritation Hazard Category 1
Aquatic Environment Acute Hazard Category 2
Aquatic Environment Chronic Hazard Category 3

LABEL ELEMENTS

Signal Word
Danger

Hazard Statements
May be corrosive to metals
Causes severe skin burns and eye damage
Toxic to aquatic life
Harmful to aquatic life with long lasting effects

Precautionary Statements
Keep only in original container.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid release to the environment.
Absorb spillage to prevent material-damage.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor/physician.
Specific treatment (see supplemental first aid instructions on this label).
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Store in corrosive resistant container with a resistant inner liner.
Store locked up.
Dispose of contents/container in accordance with local and national regulations.

Hazards Not Otherwise Classified (HNOC), Other Hazards
Spills are very slippery.
Use mechanical exhaust ventilation when heat-curing material.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance, Mixture or Article? Mixture

HAZARDOUS INGREDIENTS

Component / CAS No.	%	GHS Classification	Carcinogen
Petroleum distillate hydrotreated light 64742-47-8	20 - 25	Flam. Liq. 4 (H227) Skin Irrit. 3 (H316) Eye Irrit. 2B (H320) Asp. Tox. 1 (H304)	-
Naphtha (petroleum), hydrotreated heavy; low boiling point thermally cracked naphtha 64742-48-9	1 - 5	Flam. Liq. 3 (H226) Skin Irrit. 3 (H316) Eye Irrit. 2B (H320) Asp. Tox. 1 (H304)	-
Ammonium hydroxide 1336-21-6	0.5 - 1.5	Skin Corr. 1B (H314) Eye Dam. 1 (H318) Aquatic Acute 1 (H400)	-
Ethoxylated oleyl amine 26635-93-8	0.5 - 1.5	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Skin Corr. 1C (H314) STOT Single 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	-

The specific chemical identity and/or exact percentage of composition for one or more ingredients has been withheld as a trade secret.

Additional GHS classification or other information may be included in this section but has not been adopted by OSHA. See Section 16 for full text of H phrases.

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4. FIRST AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

Eye Contact:
Rinse immediately with plenty of water for at least 15 minutes. Obtain medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes without delay. Wear impermeable gloves. Wash immediately with plenty of water. Pay particular attention to skin crevices, nail folds, etc. Do not reuse contaminated clothing without laundering. Do not reuse contaminated leatherware. Obtain medical attention.

Ingestion:
If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Inhalation:
Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

None known

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDS

Not applicable

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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:
Use water spray, alcohol foam, carbon dioxide or dry chemical to extinguish fires. Water stream may be ineffective.

Extinguishing Media to Avoid:
full water jet

Protective Equipment:
Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).

Special Hazards:
Keep containers cool by spraying with water if exposed to fire.

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. In addition to the protective clothing/equipment in Section 8, wear a two piece PVC suit with hood or PVC overalls with hood.

Methods For Cleaning Up:
Product may cause a slip hazard. Spilled material should be absorbed onto an inert material and scooped up. Flush spill area with water. If slipperiness remains apply more dry-sweeping compound.

References to other sections:
See Sections 8 and 13 for additional information.

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7. HANDLING AND STORAGE

HANDLING

Precautions: Keep only in the original container. Wash hands thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Avoid release to the environment. Do not breathe vapors or spray mist.

Special Handling Statements: This material will corrode steel or aluminum at a rate greater than 6.25 mm (0.25 inches/year) @ 55 °C (130 °F). It is thus considered to be a corrosive material for transportation purposes. Provide good ventilation of working area (local exhaust ventilation if necessary).

STORAGE
To avoid product degradation and equipment corrosion, do not use iron, copper or aluminum containers or equipment. Keep from freezing.

Storage Temperature: Store at 5 - 40 °C 41 - 104 °F
Reason: Quality.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:
Utilize a closed system process where feasible. Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

Respiratory Protection:
Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

Eye Protection:
Prevent eye and skin contact. Provide eye wash fountain and safety shower in close proximity to points of potential exposure. Wear eye/face protection such as chemical splash proof goggles or face shield.

Skin Protection:
Prevent contamination of skin or clothing when removing protective equipment. Wear impermeable gloves and suitable protective clothing.

Hand Protection:
Nitrile or fluorinated rubber gloves. Consider the porosity and elasticity data of the glove manufacturer and the specific conditons in the work place. Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred. Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility etc) is noticed.

Additional Advice:
Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water. It is recommended that a shower be taken after completion of workshift especially if significant contact has occurred. Work clothing should then be laundered prior to reuse. Street clothing should be stored separately from work clothing and protective equipment. Work clothing and shoes should not be taken home.

Exposure Limit(s)

The below constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

1336-21-6 Ammonium hydroxide

OSHA (PEL):	50 ppm
ACGIH (TLV):	Not established
Other Value:	Not established

64742-47-8 Petroleum distillate hydrotreated light

OSHA (PEL):	165 ppm (1200 mg/m^3) (Supplier)
ACGIH (TLV):	Not established
Other Value:	1200 mg/m^3 (Supplier) 165 ppm (Supplier)

64742-48-9 Naphtha (petroleum), hydrotreated heavy; low boiling point thermally cracked naphtha

OSHA (PEL):	1200 mg/m^3 (Supplier)
ACGIH (TLV):	Not established
Other Value:	1200 mg/m^3 (Supplier)

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	gray
Appearance:	viscous liquid
Odor:	ammonia
Boiling Point:	Similar to water
Melting Point:	Not available
Vapor Pressure:	Similar to water
Specific Gravity/Density:	1.12
Vapor Density:	Similar to water
Percent Volatile (% by wt.):	60.0 - 64.4
pH:	14.0
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	Not available
Solubility In Water:	Limited by viscosity
Volatile Organic Content:	<1.9 lbs/gal
Flash Point:	No flash up to boiling point. Pensky-Martens Closed Cup
Flammability (solid, gas):	Not available
Flammable Limits (% By Vol):	Not available
Autoignition (Self) Temperature:	Not available
Decomposition Temperature:	Not available
Partition coefficient (n-octanol/water):	Not available
Odor Threshold:	Not available
Viscosity (Kinematic):	Not available

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions To Avoid:	None known
Polymerization:	Will not occur
Conditions To Avoid:	None known
Materials To Avoid:	Strong acids
Hazardous Decomposition Products:	Ammonia (NH3) Carbon dioxide Carbon monoxide (CO) Oxides of nitrogen sulfur dioxide

11. TOXICOLOGICAL INFORMATION

PRODUCT TOXICITY INFORMATION

Likely Routes of Exposure: Eyes, Skin, Oral.

ACUTE TOXICITY DATA

oral	rat	Acute LD50	>2000 mg/kg
dermal	rabbit	Acute LD50	>2000 mg/kg
inhalation	rat	Acute LC50 4 hr	>5 mg/l (Dust/Mist)

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	skin	Corrosive
Acute Irritation	eye	Causes serious damage

ALLERGIC SENSITIZATION

Sensitization	skin	Not sensitizing
Sensitization	respiratory	No data

GENOTOXICITY

Assays for Gene Mutations

Ames Salmonella Assay	No data

OTHER INFORMATION

The product toxicity information above has been estimated.

HAZARDOUS INGREDIENT TOXICITY DATA

Petroleum distillates, hydrotreated light (CAS# 64742-47-8) has acute oral (rat) and dermal (rabbit) LD50 values of >5 g/kg and >3.16 g/kg, respectively. Prolonged or repeated skin contact tends to remove skin oils, possibly leading to irritation and dermatitis. Direct contact may cause eye irritation. Overexposure to high vapor concentrations, >~700 ppm, are irritating to the eyes and respiratory tract and may cause headaches, dizziness, drowsiness, and other central nervous system effects, including death. Aspiration of minute amounts during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death. In a 90-day oral gavage (rats) study at 100, 500, or 1000 mg/kg, no treatment-related mortalities were observed. There were no significant changes in body weights or food consumption in any dose groups. Increased liver weights were observed in male and female rats a 500 and 1000 mg/kg. Increased kidney weights were observed only in male rats at 500 and 1000 mg/kg. Testes weights were significantly elevated in male rats at 1000 mg/kg. Kidney effects, indicative of light hydrocarbon nephropathy, occured in male rat kidneys at all dose levels. Histological findings of hepatocellular hypertrophy were seeen in the livers of male rats at 1000 mg/kg and in female rats at 500 and 1000 mg/kg. All treatment-related effects were reversible within the 4-week recovery period. Observed kidney effects (including light hydrocarbon nephropathy and increased kidney weight) are a unique response by male rats to chronic hydrocarbon exposure, which th U.S. EPA has declared `not relevant to humans`. High-dose liver effects (including hepatocellular hypertrophy, or enlarged liver cells) are a direct consequence of the sustained high-fat `hydrocarbon diet`. The No Observed Adverse Effect Level (NOAEL) for this study was 1000 mg/kg.

Acute overexposure to petroleum distillate vapor may cause eye and throat irritation. Certain petroleum distillate fractions may produce moderate to severe skin irritation with direct contact. Prolonged repeated exposure to petroleum distillate vapor may cause central nervous system damage as well as heart and blood disorders. The oral LD50 in the rat for various distillates ranges from 4.5 to greater than 25 ml/kg, and the inhalation LC50 in rats is about 15000 ppm. Aspiration of petroleum distillate may cause chemical pneumonitis. Overexposure to vapor may cause dizziness, drowsiness, headache and nausea.

Ammonia vapor can cause respiratory tract and eye irritation. Direct contact with ammonia solutions causes irreversible eye damage, mucous membrane swelling and skin burns. The LC50 in rats by inhalation after 1-hour exposure is 7338 ppm (1.27 mg/L). Single dose oral administration of ammonia solution to rats at 350 mg/kg produced no toxic effects.

Ethoxylated oleyl amine toxicological properties have not been fully investigated. It is reported to have an oral (rat) LD50 value of 1500 mg/kg. It is also reported to be severely irritating to eyes and skin. Inhalation exposure to mist/aerosol may cause severe respiratory irritation.

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12. ECOLOGICAL INFORMATION

TOXICITY, PERSISTENCE AND DEGRADABILITY, BIOACCUMULATIVE POTENTIAL, MOBILITY IN SOIL, OTHER ADVERSE EFFECTS

Overall Environmental Toxicity: Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

The ecological assessment for this material is based on an evaluation of its components.

RESULTS OF PBT AND vPvB ASSESSMENT
Not determined

HAZARDOUS INGREDIENT TOXICITY DATA

Component / CAS No.	Toxicity to Algae	Toxicity to Fish	Toxicity to Water Flea
Petroleum distillate hydrotreated light 64742-47-8	Not available	LC50 = 2.2 mg/L - Lepomis macrochirus (96h) static LC50 = 2.4 mg/L - Oncorhynchus mykiss (96h) static LC50 = 45 mg/L - Pimephales promelas (96h) flow-through	Not available
Naphtha (petroleum), hydrotreated heavy; low boiling point thermally cracked naphtha 64742-48-9	Not available	LC50 = 2200 mg/L - Pimephales promelas (96h)	Not available
Ammonium hydroxide 1336-21-6	Not available	LC50 = 8.2 mg/L - Pimephales promelas (96h)	EC50 = 0.66 mg/L - water flea (48h) EC50 = 0.66 mg/L - Daphnia pulex (48h)
Ethoxylated oleyl amine 26635-93-8	Not available	Not available	Not available

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13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicate if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 3 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

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14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Dangerous Goods? X
- Proper Shipping Name: Corrosive liquid, n.o.s.
- Hazard Class: 8
- Packing Group: II
- UN/ID Number: UN1760
- Transport Label Required: Corrosive
- Technical Name (N.O.S.): Ammonium hydroxide

TRANSPORT CANADA

Dangerous Goods? X
- Proper Shipping Name: Corrosive liquid, n.o.s.
- Hazard Class: 8
- Packing Group: II
- UN Number: UN1760
- Transport Label Required: Corrosive
- Technical Name (N.O.S.): Ammonium hydroxide

ICAO / IATA

Dangerous Goods? X
- Proper Shipping Name: Corrosive liquid, n.o.s.
- Hazard Class: 8
- Packing Group: II
- UN Number: UN1760
- Transport Label Required: Corrosive
- Technical Name (N.O.S.): Ammonium hydroxide

IMO

Dangerous Goods? X

Proper Shipping Name: Corrosive liquid, n.o.s.
Hazard Class: 8
UN Number: UN1760
Packing Group: II
Transport Label Required: Corrosive
Technical Name (N.O.S.): Ammonium hydroxide

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15. REGULATORY INFORMATION

Inventory Information

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

European Economic Area (including EU): When purchased from a Cytec legal entity based in the EU, this product is compliant with the registration of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, pre-registered and/or registered.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.

China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

Japan: One or more components of this product are NOT included on the Japanese (ENCS) inventory.

Korea: One or more components of this product are NOT included on the Korean (ECL) inventory.

Philippines: One or more components of this product are NOT included on the Philippine (PICCS) inventory.

Taiwan: All components of this product are included on the Taiwan Chemical Substance Inventory (TCSI) or are not required to be listed on the Taiwan inventory.

OTHER ENVIRONMENTAL INFORMATION
The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

Component / CAS No.	%	TPQ (lbs)	RQ(lbs)	S313	TSCA 12B
Ammonium hydroxide 1336-21-6	0.5 - 1.5	None	1000	Yes(as Aqueous ammonia from water dissociable ammonium salts and other sources)	No

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- Acute

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16. OTHER INFORMATION

16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)

Health: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

Fire: 1 - Materials that must be preheated before ignition can occur.

Instability: 0 - Materials that in themselves are normally stable, even under fire exposure conditions.

Reasons For Issue: Revised Section 1

Date Prepared: 11/23/2015
Date of last significant revision: 10/05/2015

Component Hazard Phrases

Petroleum distillate hydrotreated light
- H227 - Combustible liquid.
- H316 - Causes mild skin irritation.
- H320 - Causes eye irritation.
- H304 - May be fatal if swallowed and enters airways.

Naphtha (petroleum), hydrotreated heavy; low boiling point thermally cracked naphtha
- H226 - Flammable liquid and vapor.
- H316 - Causes mild skin irritation.
- H320 - Causes eye irritation.
- H304 - May be fatal if swallowed and enters airways.

Ammonium hydroxide
- H314 - Causes severe skin burns and eye damage.
- H400 - Very toxic to aquatic life.

Ethoxylated oleyl amine
- H302 - Harmful if swallowed.
- H318 - Causes serious eye damage.
- H314 - Causes severe skin burns and eye damage.
- H335 - May cause respiratory irritation.
- H400 - Very toxic to aquatic life.
- H410 - Very toxic to aquatic life with long lasting effects.

Prepared By: Legal & Compliance Services; E-mail: custinfo@cytec.com

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*): **2-14K1 [14HX]**

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

Reactor (like-kind replacement for existing reactor), which utilizes existing Condensers (3-14CD1 & 3-14CD3); no control device; vents via existing emission points 14DE and 14EE.

Vertical Vessel, 4,000 gals, Hastelloy C-276, Design Pressure 185psi to -15psi.

Manufacturer: Fourinox Model: NB2558

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:

UV-2908:	A-1790:
TOLUENE	METHYL ISOBUTYL KETONE
N-HEXADECANOL	DIMETHYLFORMAMIDE
2,6-DTBP	TEA (TRIETHYLAMINE)
SHELL ACID	A-1846
METHANE SULFONIC ACID	TBX (6-TERT-BUTYL-2,4-XYLENOL)
HYFLO SUPER-CEL (SILICA)	SODIUM HYDROXIDE
SODIUM BICARBONATE	CYANURIC ACID DRY
WATER	WATER

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

A-1790
UV-2908

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

NA

* 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): NA

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

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

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

@ ℉ 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: × 10^6 BTU/hr.

7. Projected operating schedule:

Hours/Day	24	Days/Week	7	Weeks/Year	52

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

@ 75 °F and 14.7 psia

a.	NO_X		lb/hr	grains/ACF
b.	SO_2		lb/hr	grains/ACF
c.	CO		lb/hr	grains/ACF
d.	PM_{10}	0.24	lb/hr	grains/ACF
e.	Hydrocarbons		lb/hr	grains/ACF
f.	VOCs	1.39	lb/hr	grains/ACF
g.	Pb		lb/hr	grains/ACF
h.	Specify other(s)			
	Total HAPs	1.39	lb/hr	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
Cytec does not believe that any additional MRRT is needed beyond the existing R13-2156W permit terms.	
REPORTING	TESTING

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
NA

Attachment N
Supporting Emissions Calculations

The maximum emission estimates for every product and associated process in the Polymer Additives Manufacturing Unit were calculated using either Emission Master ™ emission modeling software, or other appropriate emission estimation models and calculation methodologies, as required by R13-2156W Section 4.1.5:

> Compliance with the emission limits set forth in Section 4.1.1, shall be demonstrated by calculating emissions for every product in the Building 82 Manufacturing Unit using Emission Master®, emission modeling software, or other appropriate emission/discharge estimation models or calculation methodologies (e.g., ChemCAD®, PlantWare®, USEPA's TANKS 4.0, etc.). When these emissions are calculated, each emission point listed in Section 1.0 with emissions of regulated air pollutants listed in Section 4.1.1 shall be included in the calculations and accounted for in the emission estimates. The emission models and other calculation methods shall be maintained current for all processes, process modifications and new product variants. The Director of the Division of Air Quality may specify or may approve other valid methods for compliance determination when he or she deems it appropriate and necessary.

CYTEC has determined the maximum potential annual emissions of the new UHX-2000 and UHX-3000 products to be the following, based upon forecast maximum annual production:

UHX-2000 and UHX-3000

POLLUTANT	CAS	HAP? (Y or N)	Max. Hourly (lb/hr)	Max. Annual (lb/yr)
Total PM	-	-	<0.008	<1.5
Total VOC	-	-	0.45	92.0

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) FFFF)
☐ 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).	

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. N/A
☐ **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.

Cytec expects this Title V Permit revision to be wholly within the scope of the proposed revisions to Permit R13-2156W. See proposed draft administrative update R13-2156X permit language.

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
R13-2156W	10/16/2015	
R30-07300003-2010 (MM09); (Part 4 of 4)	1/14/2015	
	/ /	

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
N/A	/ /	
	/ /	
	/ /	

6. Change in Potential Emissions -

Pollutant	Change in Potential Emissions (+ or -), TPY
NA	No increase in allowable emissions in R13-2156X.

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: *February* / *4* / *2016* *(Please use blue ink)*

Named (typed): Michael A. Young Title: Plant Manager

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

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

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

ATTACHMENT 1

SUMMARY OF REVISIONS
2nd Half 2015

Section	Revisions
1.0	Add the new Product/Process Area UHX-2000 and UHX-3000 utilizing existing equipment. Correct typo.
2.0	Permit revision level updates to Sections 2.4.1 & 2.5.1.
3.0	No changes.
4.0	No changes.
Appendix A	No changes.
Appendix B	No changes.

West Virginia Department of Environmental Protection
Division of Air Quality

Earl Ray Tomblin
Governor

Randy C. Huffman
Cabinet Secretary

Class I Administrative Update

R13- ~~2156W~~2156X

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§22-5-1 et seq.) and 45 C.S.R. 13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the above-referenced facility is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:

Cytec Industries, Inc.
Willow Island, WV
073-00003

_____

William F. Durham
Director

Issued: ~~*October 16, 2015*~~ *DRAFT* • *Effective:* ~~*October 16, 2015*~~ *DRAFT*

This permit will supersede and replace Permit R13-~~2156V~~ 2156W approved ~~April 24~~ October 16, 2015.

Facility Location:	Willow Island, Pleasants County, West Virginia
Mailing Address:	#1 Heilman Avenue, Willow Island, WV 26134
Facility Description:	Building 82 Manufacturing Unit
SIC Codes:	2869: Chemicals and Allied Products – Industrial Organic Chemicals, NEC 2899: Chemicals and Allied Products – Chemical Preparations, NEC 2843: Surface Active Agents, Finishing Agents, Sulfonated Oils, and Assistants
UTM Coordinates:	473.4 km Easting • 4,356.2 km Northing • Zone 17
Permit Type:	~~Class II~~ Class I Administrative Update
Description of Change:	Revisions made in the Polymer Additives manufacturing unit during the ~~first~~ second half of 2015 and updated per semiannual reporting requirement of Section 4.5.5. - ~~Add existing Waste Hold Tank 181X (S-18T1) for the Product/Process Area HALS (UV3346, UV3529, UV4593, UV4611, UV4801, UV4802, UV6435, UV6460).~~ - Add the new Product/Process Area ~~Aerosol GPG N~~ UHX-2000 and UHX-3000 ~~with~~ which utilizes existing equipment. - ~~Make minor clarifications and c~~Correct typo~~s~~.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §§22-5-14.

The source is subject to 45 C.S.R. 30. The permittee has the duty to update the facility's Title V (45 C.S.R. 30) permit application to reflect the changes permitted herein.

Table of Contents

1.0. Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
Product/Process Area – HALS (UV3346, UV3529, UV4593, UV4611, UV4801, UV4802, UV6435, UV6460)					
076X	076E	Formic Acid Storage Tank (S-7T4)	9/2014	10,000 gal	NA
06CX	06EE	Step II Reactor (2-6K3); Condenser (3-6CD3); Condenser 06EC (3-6CD3A)	--	--	NA
	06FE	Industrial hygiene vent for Step II Reactor	--	--	NA
06EY	06EE	Splitter Bowl	--	--	NA
07AX	07AE	Step I Reactor (3-7K4); Condenser (3-7CD4); Condenser (3-7CD4A)	--	--	NA
	07CE	Industrial hygiene vent for Step I Reactor	--	--	07CC
07BX	07BE	Waste Hold Tank (1-7T5)	--	--	NA
07DX	09CE	Toluene Receiver (1-7T4)	--	--	075C
07GX	07GE	Toluene Receiver Tank (3-7K2)	--	--	075C
07KX	07NE	Filter Feed Kettle (2-7K8); Condenser (3-7CD8); Condenser (3-7CD8A)	--	--	NA
07KX	07FE	Industrial hygiene vent for PTS Station	--	--	NA
07NY	07NE	Splitter Bowl	--	--	NA
08AX	08BE	Filter (2-8F2); Condenser (3-8CD8); Condenser (3-8CD8A)	--	--	08VC
	05KE	Filter (Industrial hygiene vent to atmosphere)	--	--	NA
08BX	08BE	Filter Aid Tank (2-8K8); Condenser (3-8CD8); Condenser (3-8CD8A)	--	--	08VC
	05KE	Industrial hygiene vent for Filter Aid Tank	--	--	NA
08FX	08BE	Filter (N-8F1); Condenser (3-8CD8); Condenser (3-8CD8A)	--	--	08VC
	05KE	Filter (N-8F1) (Industrial hygiene vent to atmosphere)	--	--	NA
08RX	08RE	Pastillator (2-10RTF1)	--	--	08RC
09AX	09AE	Strip Receiver (3-9K3) Condenser (3-9CD3)	--	--	NA
09CX	09CE	Filtrate Receiver (2-9K4); Condenser (RF-8CD1); Condenser (RF-8CD2)	--	--	NA
	09FE	Industrial hygiene vent for Filtrate Receiver	--	--	NA
09TX	09CE	Knock Out Pot (3-9T4)	--	--	NA
09DX	09CE	Splitter Bowl (2-9SB4)	--	--	075C
09FX	NA	Mott Filter (3-9F3)	--	--	NA
09KX	09NE	Strip Kettle (3-9K2); Condenser (3-9CD2); Condenser (3-9CD2A)	--	--	NA
09PY	09PE	Condensate Receiver (3-9T7); Vacuum Pump (09PX); Vacuum Blower (09BX); Condenser (3-9CD5); Condenser (3-9CD5A)	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
09RX	NA	Electric Oil Heater with Hot Oil Surge Tank (3-9T1)	--	--	NA
10CX	10CE	Step II Reactor (2-10K3); Condenser (3-10CD1); Condenser 10CC (3-10CD2)	--	--	NA
	10IE	Industrial hygiene vent for Step II Reactor	--	--	NA
10IX	10CE	Splitter Bowl	--	--	NA
10PX	10PE	Melt Tank (3-10K2)	--	--	NA
10RX	NA	Electric Oil Heater with Hot Oil Surge Tank (3-10T8)	--	--	NA
10SX	NA	Product Bin (1-10BN1)	--	--	NA
10TX	08RE	Screener (1-10SCR1)	--	--	08RC
11AX	12DE	2-11K1 industrial hygiene vent	--	--	NA
	11AE	Step II Reactor (2-11K1); Condenser (3-12CD1); Condenser 12CC (3-12CD2)	--	--	NA
12CX	11AE	Splitter Bowl (3-12SB1)	--	--	NA
181X	181E	Waste Hold Tank (S-18T1)	--	--	NA
DRUM08	08RE	Drumming Station	--	--	08RC

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
07CC	07AX	07CE	Scrubber	NA
075C	07DX, 09DX, 075X, 07GX	09CE	Vapor Return	NA
08VC	08AX, 08BX, 08FX	08BE	Vapor Return	NA
08RC	08RX, 10TX	08RE	Dust Collector	NA

Product/Process Area – Triazines Solids (UV1164)					
20BX	22BE	Condensate Receiver	--	--	NA
20KX	20KE	2-19K1 Reactor with condenser 3-19CD1	--	--	NA
20LX	20AE	Splitter Bowl	--	--	NA
20PX	20PE	Split Receiver	--	--	NA
20RX	20KE	Knock-out pot	2014	--	NA
21WX	22QE	Industrial hygiene hood over 1164 packaging station	--	--	22QC
21AX	21AE	Centrifuge	--	--	NA
21AY	22QE	Industrial hygiene hood over Wet Bin	--	--	22QC
	NA	Wet Bin	--	--	NA
20NX	21DE	Industrial hygiene hood over UV-1164 Reactor & Strip Kettle	--	--	NA
	20AE	Reactor with Condenser 3-20CD1 and 3-20CD1A	--	--	NA
22BX	22QE	Industrial hygiene hood over Vacuum Tumble Dryer (1-21D1)	--	--	22QC

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
	22BE	Vacuum Tumble Dryer with condenser 2-21CD1	--	--	NA
22DX	22QE	Industrial hygiene hood over Vacuum Tumble Dryer (1-22D1)	--	--	22QC
	22BE	Vacuum Tumble Dryer with condenser 2-22CD1	--	--	NA
22CX	22BE	Condensate Receiver	--	--	NA
22MX	22ME	Solvent Storage	9/1979	2,000 gal	NA
22PX	22BE	Vacuum Pump	--	--	NA
23AX	22QE	Industrial hygiene hood over UV-1164 Packer & Drumming Station	--	--	22QC
23SX	25JE	Tank with condenser 3-23CD1	--	--	NA
24BX	24BE	Wash Tank	--	--	NA
24MX 24QX 24YX	24FE	Industrial hygiene hood over UV-1164 Reactor (2-24K2), Strip Kettle (2-24K1), Sparkler Filter (3-25SF1)	--	--	NA
24JX	24GE	Splitter Bowl	--	--	NA
24NX	24ME	Condensate Receiver	--	--	NA
24MX	24ME	Strip Kettle with Condenser 3-25CD2	--	--	NA
24PX	24PE	Vacuum Jet (LR-24VJ1)	--	--	NA
24QX	24GE	UV-1164 Reactor with Condenser 3-25CD1	--	--	NA
24RX	24RE	Condensate Receiver	--	--	NA
25EX	22QE	Industrial hygiene hood over Wet Bin	--	--	22QC
	NA	Wet Bin	--	--	NA
25CX	25AE	Centrifuge	--	--	NA
26FX	22BE	Agitated Filter Dryer (2-26F1)	--	--	NA
26HX	26GE	Packaging Unit (1-26BAG1)	--	--	26GX

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
22QC	21AY, 22BX, 22DX, 23AX, 25EX	22QE	Dust Collector (RF-22DC1)	NA
26GX	26HX	26GE	Dust Collector	NA

Product/Process Area – Triazine Liquids (UV1164A, UV1164D, UV1164G, UV1164L)					
21DX	20BE	Reactor with condensers 3-22CD1 and 3-22CD1A	--	--	NA
	21DE	Industrial hygiene hood over reactor	--	--	NA
20CX	NA	Sparkler Filter	--	--	NA
20EX	20EE	Condensate Receiver	--	--	NA
20FX	20DE	Vacuum Jet (3-19VJ1)	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
22KX	20BE	Splitter Bowl	--	--	NA
20PX	20PE	Split Receiver	--	--	NA
24TX	24FE	Industrial hygiene hood over Triazine Liquids Drumming Station (1-24D1)	--	--	NA
Product/Process Area – Depressants (ACCO-PHOS 950, Aero 7260HFP, Aero 8860GL)					
20EX	20EE	Condenser Receiver	--	--	NA
20FX	20DE	Vacuum Jets (3-19VJ1)	--	--	NA
19AX	NA	Catalyst A Tank	2012	130 gal	NA
21DX	21DE	Industrial hygiene hood over UV-1164 Reactor & Strip Kettle	--	--	NA
	20BE	Strip Kettle with Condenser 3-22CD1 and 3-22CD1A	--	--	NA
22KX	20BE	Splitter Bowl	--	--	NA
23LX	23LE	Feed Tank	--	--	NA
	23ME	Industrial hygiene hood over Feed Tank	--	--	NA
24TX	24FE	Drumming Station	--	--	NA
261X	261E	Acrylamide/Water Mixture Storage Tank (N-26T1)	2013	18,000 gal	NA
Product/Process Area – S-10333 (Magnetite in Water)					
21DX	21DE	Industrial hygiene hood over UV-1164 Reactor & Strip Kettle	--	--	NA
	20BE	Strip Kettle with Condenser 3-22CD1	--	--	NA
22KX	20BE	Splitter Bowl	--	--	NA
23LX	23LE	Feed Tank	--	--	NA
	23ME	Industrial hygiene hood over Feed Tank	--	--	NA
24TX	24FE	Drumming Station	--	--	NA
Product/Process Area – AY-55 DMAC					

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
21DX	21DE	Industrial hygiene hood over UV-1164 Reactor & Strip Kettle	--	--	NA
	20BE	Strip Kettle with Condenser 3-22CD1 and 3-22CD1A	--	--	NA
22KX	20BE	Splitter Bowl	--	--	NA
20EX	20EE	Condensate Receiver	--	--	NA
20FX	20DE	Vacuum Jet (3-19VJ1)	--	--	NA
24TX	24FE	Drumming Station	--	--	NA
Product/Process Area – A425					
20BX	22BE	Condensate Receiver	--	--	NA
20KX	20KE	Reactor with condenser 3-19CD1	--	--	NA
20RX	20KE	Knock-out Pot	--	--	NA
21AX	21AE	Centrifuge	--	--	NA
21AY	22QE	Industrial hygiene hood over Wet Bin	--	--	22QC
	NA	Wet Bin	--	--	NA
21WX	22QE	Industrial hygiene vent on Packer	--	--	22QC
22BX	22QE	Industrial hygiene vent on Dryer	--	--	22QC
22BX	22BE	Dryer with Condenser (2-21CD1)	--	--	NA
22CX	22BE	Condensate Receiver	--	--	NA
22DX	22QE	Industrial hygiene vent on Dryer	--	--	22QC
	22BE	Dryer with Condenser (2-22CD1)	--	--	NA
22PX	22BE	Vacuum Pump	--	--	NA
23AX	22QE	Industrial hygiene vent on Packer	--	--	22QC
24BX	24BE	Wash Tank	--	--	NA
24JX	24GE	Splitter Bowl	--	--	NA
24MX	24FE	Industrial hygiene hood over Centrifuge Feed Kettle	--	--	NA
	24ME	Centrifuge Feed Kettle	--	--	NA
24NX	24ME	Condensate Receiver from Condenser (3-25CD2)	--	--	NA
24QX	24FE	Industrial hygiene hood over A425 Reactor	--	--	NA
	24RE	Reactor with condenser 3-25CD1	--	--	NA
24RX	24RE	Condensate Receiver	--	--	NA
25CX	25AE	Centrifuge	--	--	NA
26FX	22BE	Agitated Filter Dryer (2-26F1)	--	--	NA
26HX	26GE	Packaging Unit (1-26BAG1)	--	--	26GX
25EX	22QE	Industrial hygiene hood over Wet Bin	--	--	22QC
	NA	Wet Bin	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
Control Device ID	**Emission Units Controlled**	**Emission Point**	**Control Device Description**		**Next Control Device in Series**
22QC	21AY, 21WX, 22BX, 22DX, 23AX, 25EX	22QE	Dust Collector (RF-22DC1)		NA
26GX	26HX	26GE	Dust Collector		NA
Product/Process Area – A1846					
05LX	05LE	A-1846 Reactor (2-5K8) with Condensers (3-5CD8 & 3-5CD8A)	--	--	05KC
05LX	05ME	Industrial hygiene vent on A-1846 Reactor	--	--	NA
05NX	05NE	Condensate Receiver (05NX); Vacuum Jet (3-6VJ7)	--	--	NA
06BX	05NE	Hot Well for Vacuum Jets (3-6VJ7)	--	--	NA
06NX	05LE	Split Tank with Condenser (3-6CD8)	--	--	05KC
06QX	06QE	Salt Wash Tank (3-6K2)	--	--	NA
06SX	06SE	A-1846 Wash/Dehydration Reactor (N-6K1) with Condensers (N-6CD1 & N-6CD1A)	--	--	NA
15NX	15NE	A-1846 Storage Tank (3-15T3)	--	--	NA
Control Device ID	**Emission Units Controlled**	**Emission Point**	**Control Device Description**		**Next Control Device in Series**
05KC	05LX	05LE	Scrubber		NA
Product/Process Area – S10104, XD-5002					
06NX	05LE	Split Tank (2-6K8) with Condenser (3-6CD8)	--	--	05KC
05LX	05LE	A-1846 Reactor (2-5K8)	--	--	05KC
05LX	05ME	Industrial hygiene vent on A-1846 Reactor	--	--	NA
Product/Process Area – A1790					
102X	11ME	Mother Liquor Tank (S-10T2)	--	--	10VC, 15VC
111X	11ME	Mother Liquor Tank (S-11T1)	--	--	10VC, 15VC
112X	11ME	Mother Liquor Tank (S-11T2)	--	--	10VC, 15VC
1-21CV1	NA	Conveyor	--	--	NA
12LX	12CE	Centrifuge Feed Tank (2-12K2) with Condenser (3-13CD1)	--	--	18VC, 11VC
12LX	12DE	Industrial hygiene vent on Centrifuge Feed Tank	--	--	NA
13BY	13GE	Condensate Receiver (1-13T2)	--	--	NA
13HX	13HE	Centrifuge (3-13W1)	--	--	NA
13JX	13JE	Industrial hygiene vent on Dryer (1-13D1)	--	--	13JC
13JX	13GE	Dryer (1-13D1) and Condenser (1-13CD1)	--	--	NA
13KX	NA	Dry Bin (1-13BN1)	--	--	NA
13LX	NA	Screener (1-13SCR1)	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
13MX	NA	Conveyor (1-13SCV1)	--	--	NA
13NX	13JE	Industrial hygiene vent on Bagger (1-13BAG1)	--	--	13JC
13HY	NA	Wet Bin (2-13BN1)	--	--	NA
14CX	14CE	Wash Tank (3-14T1)	--	--	NA
14FX	14BE	Reactor (2-14K2) and Condensers (3-14CD2 & 3-14CD4)	--	--	NA
14FX	14EE	Industrial hygiene vent on Reactor (14FX)	--	--	NA
14GY	14GE	Condensate Receiver (1-14T2) and Condenser (1-14CD1) and Vacuum Pump (15CX)	--	--	NA
14HX	14DE	Reactor (~~2-14K2~~2-14K1) and Condensers (3-14CD1 & 3-14CD3)	--	--	NA
14HX	14EE	Industrial hygiene vent on Reactor (14HX)	--	--	NA
15BX	13JE	Industrial hygiene vent on Dryer (1-15D1)	--	--	13JC
15BX	14GE	Vacuum Dryer (1-15D1)	--	--	NA
15EX	15EE	Centrifuge (3-15W1)	--	--	NA
15EY	NA	Wet Bin (2-15BN1)	--	--	NA
	13JE	Industrial hygiene hood over Wet Bin	--	--	13JC
15FX	15FE	Wash Tank (3-15T1)	--	--	NA
15PX	NA	Dry Bin (1-15BN1)	--	--	NA
15QX	NA	Screener (1-15SCR1)	--	--	NA
16JX	16JE	Reactor (3-16K1)	--	--	NA
16JX	18JE	Industrial hygiene vent on Split Recycle (16JX)	--	--	NA
16UX	16CE	Reactor (2-16K1) with Condenser (3-16CD1 &3-16CD5)	--	--	NA
16UX	18JE	Industrial hygiene vent on Reactor (16UX)			NA
16WX	16BE	Vacuum Strip Crystallizer (2-16K2) with Condenser (3-16CD2)	--	--	NA
16WX	18JE	Industrial hygiene vent on Reactor (16WX)	--	--	NA
16YX	NA	Conveyor (1-16SCV1)	--	--	NA
16ZX	13JE	Industrial hygiene vent on Bagger (1-16BAG1)	--	--	13JC
17AX	17AE	Methanol Drown Tank (3-17T1)	--	--	NA
17GX	17QE	Split Tank (2-17K1)	--	--	17VC
17JX	17QE	Mix Tank (2-17K2)	--	--	17VC
17PX	17QE	Condensate Receiver (3-17T2) and Condensers (3-16CD3 & 3-16CD4) and Vacuum Pump (17QX)	--	--	17VC
17PX	18JE	Industrial hygiene vent on Condensate Receiver (17PX)	--	--	NA
18SX	18ME	Hold Tank (2-18K1) with Condenser (3-18CD1)	--	--	18VC, 11VC
20BX	22BE	Condensate Receiver (2-21T3) and Condenser (2-21CD1) and Vacuum Pump (22 PX)	--	--	NA
20KX	20KE	Reactor (2-19K1) with condenser 3-19CD1	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
20KX	21DE	Industrial hygiene vent on Reactor (2-19K1)	--	--	NA
20RX	20KE	Knock-out Pot	--	--	NA
21AX	21AE	Centrifuge	--	--	NA
21AY	NA	Wet Bin	--	--	NA
	22QE	Industrial hygiene hood over Wet Bin	--	--	22QC
22BX	22QE	Industrial hygiene vent on Dryer	--	--	22QC
22BX	22BE	Dryer with Condensate Receiver (20BX) and Condenser (2-21CD1)	--	--	NA
22CX	22BE	Condensate receiver from 2-22CD1 and 22PX	--	--	NA
24BX	24BE	Wash Tank	--	--	NA
21WX	22QE	Industrial hygiene vent on Bagger	--	--	22QC
24JX	24GE	Splitter Bowl	--	--	NA
24MX	24ME	Strip Kettle (2-24K1) with condenser 3-25CD2	--	--	NA
24QX	24RE	Reactor (2-24K2) with condenser 3-25CD1	--	--	NA
24MX 24QX	24FE	Industrial hygiene hoods over Strip Kettle (2-24K1), Reactor (2-24K2)	--	--	NA
24NX	24ME	Condensate Receiver	--	--	NA
24RX	24RE	Condensate Receiver	--	--	NA
26FX	22BE	Agitated Filter Dryer (2-26F1)	--	--	NA
26HX	26GE	Packaging Unit (1-26BAG1)	--	--	26GX

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
10VC, 15VC	102X, 103X, 111X, 112X	11ME	Vapor Return	11MV
13JC	13NX, 13HY, 15BX. 15EY, 16ZX	13JE	Dust Collector	NA
18VC, 11VC	12LX, 18SX	12CE, 18ME	Vapor Return	NA
17VC	17GX, 17JX, 17PX	17QE	Vapor Return	NA
22QC	15EY, 21AY, 21WX, 22BX	22QE	Dust Collector	NA
26GX	26HX	26GE	Dust Collector	NA

Product/Process Area – A2777					
13JX	13JE	Industrial hygiene vent on Dryer	--	--	13JC
13JX	13GE	Dryer and Vacuum Pump (13GX)	--	--	NA
13KX	NA	Dry Bin	--	--	NA
13LX	NA	Screener	--	--	NA
13MX	NA	Conveyor	--	--	NA
13NX	13JE	Industrial hygiene vent on Bagger	--	--	13JC

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
15BX	13JE	Industrial hygiene vent on Dryer	--	--	13JC
15BX	14GE	Vacuum Dryer and Vacuum Pump (15CX)	--	--	NA
15PX	NA	Dry Bin	--	--	NA
15QX	NA	Screener	--	--	NA
16YX	NA	Conveyor	--	--	NA
16ZX	13JE	Industrial hygiene vent on Bagger	--	--	13JC
21WX	22QE	Industrial hygiene vent on Packer	--	--	22QC
22BX	22QE	Industrial hygiene vent on Blender	--	--	22QC
22DX	22QE	Industrial hygiene vent on Blender	--	--	22QC
23AX	22QE	Industrial hygiene vent on Packer	--	--	22QC

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
13JC	13JX, 13NX, 15BX, 16ZX	13JE	Dust Collector	NA
22QC	21WX, 22BX, 22DX, 23AX	22QE	Dust Collector	NA

Product/Process Area – CA150					
20KX	20KE	Reactor 2-19K1 with condenser 3-19CD1	--	--	NA
20RX	20KE	Knock-out Pot	--	--	NA
21AX	21AE	Centrifuge	--	--	NA
21AY	22QE	Wet Bin	--	--	22QC
22CX	22BE	Condensate receiver with 2-22CD1 and 22PX	--	--	NA
24BX	24BE	Wash Tank	--	--	NA
24HX	24HE	TDI Head Tank	--	--	NA
24JX	24GE	Splitter Bowl	--	--	NA
24MX	24FE	Industrial hygiene hood over Centrifuge Feed Kettle	--	--	NA
	24ME	Centrifuge Feed Kettle	--	--	NA
24NX	24ME	Condensate Receiver from Condenser (3-25CD2)	--	--	NA
24PX	24PE	Vacuum Jets & Hot Well	--	--	NA
24QX	24FE	Industrial hygiene hood over CA150 Reactor	--	--	NA
	24GE	Reactor	--	--	NA
25BX	25BE	Fluid Bed Dryer	--	--	NA
25CX	25AE	Centrifuge	--	--	NA
24CX	23AE	Vac-U-Max	--	--	23AC
25EX	22QE	Wet Bin	--	--	22QC
25TX	NA	Dry Bin	--	--	NA
26FX	22BE	Agitated Filter Dryer (2-26F1)	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
26HX	26GE	Packaging Unit (1-26BAG1)	--	--	26GX
DRUM23	23AE	Industrial hygiene hood over drums	--	--	23AC

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
22QC	25EX	22QE	Dust Collector	NA
23AC	DRUM23	23AE	Dust Collector	NA
26GX	26HX	26GE	Dust Collector	NA

Product/Process Area – CIP200					
21AX	21AE	Centrifuge	--	--	NA
21AY	22QE	Wet Bin	--	--	22QC
22GX	22QE	Industrial hygiene vent on Tray Dryer	--	--	22QC
	22GE	Tray Dryer	--	--	NA
24BX	24BE	Methanol Tank	--	--	NA
24JX	24GE	Splitter Bowl	--	--	NA
24MX	24FE	Industrial hygiene hood over Crystallizer Strip Kettle	--	--	NA
	24ME	Crystallizer Strip Kettle	--	--	NA
24NX	24ME	Condensate Receiver from Condenser (3-25CD2)	--	--	NA
24PX	24PE	Vacuum Jets & Hot Well	--	--	NA
24QX	24FE	Industrial Hygiene Hood over CIP-200 Reactor	--	--	NA
	24GE	Reactor	--	--	NA
24RX	24RE	Condensate Receiver from Condenser (3-25CD1)	--	--	NA
24YX	24FE	Industrial hygiene hood over Sparkler Filter	--	--	NA
25CX	25AE	Centrifuge	--	--	NA
25EX	22QE	Wet Bin	--	--	22QC
DRUM22	22QE	Industrial hygiene vent on drumming station	--	--	22QC

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
10VC, 15VC	102X, 103X, 111X, 112X	11ME	Vapor Return	11MV
22QC	22GX, DRUM22	22QE	Dust Collector	NA

Product/Process Area – UV416					
21AX	21AE	Centrifuge	--	--	NA
21AY	22QE	Industrial hygiene vent on Wet Bin	--	--	22QC
21WX	22QE	Industrial hygiene vent on Packer & Drumming Station	--	--	22QC
22GX	22QE	Industrial hygiene vent on Tray Dryer	--	--	22QC
	22GE	Tray Dryer	--	--	NA
24BX	24BE	Wash Tank	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
24JX	24GE	Splitter Bowl	--	--	NA
24MX	24FE	Industrial hygiene hood over Crystallizer Kettle	--	--	NA
	24ME	Crystallizer Kettle	--	--	NA
24NX	24ME	Condensate Receiver from Condenser (3-25CD2)	--	--	NA
24QX	24FE	Industrial hygiene hood over UV416 Reactor	--	--	NA
	24GE	Reactor	--	--	NA
25CX	25AE	Centrifuge	--	--	NA
25EX	22QE	Industrial hygiene vent on Wet Bin	--	--	22QC
DRUM24	24FE	Industrial hygiene hood over drumming station	--	--	NA

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
22QC	21AY, 21WX, 22GX, 23AX, 25EX	22QE	Dust Collector	NA

Product/Process Area – UV2126					
20EX	20EE	Condensate Receiver	--	--	NA
20FX	20DE	Vacuum Jet (3-19VJ1)	--	--	NA
20KX	20KE	Solvent Recycle Tank	--	--	NA
20NX	20AE	UV-1164 Reactor with Condenser 3-20CD1	--	--	NA
21AX	21AE	Centrifuge	--	--	NA
21AY	22QE	Industrial hygiene vent on Wet Bin	--	--	22QC
21DX	21DE	Industrial hygiene hood over UV-1164 Reactor & Strip Kettle	--	--	NA
	20BE	Strip Kettle with Condenser 3-22CD1	--	--	NA
21WX	22QE	Industrial hygiene vent on Packer & Drumming Station	--	--	22QC
22GX	22GE	Tray Dryer	--	--	NA
	22QE	Industrial hygiene vent on Tray Dryer	--	--	22QC
22KX	20BE	Splitter Bowl	--	--	NA
22MX	22ME	Solvent Storage	9/1979	2,000 gal	NA
23SX	25JE	Tank with condenser 3-23CD1	--	--	NA
24BX	24BE	Wash Tank	--	--	NA
24MX	24FE	Industrial hygiene hood over Crystallizer Strip Kettle	--	--	NA
	24ME	Crystallizer Strip Kettle	--	--	NA
24NX	24ME	Condensate Receiver from Condenser (3-25CD2)	--	--	NA
24PX	24PE	Vacuum Jets & Hot Well	--	--	NA
24QX	24RE	UV2126 Reactor	--	--	NA
	24FE	Industrial hygiene hood over UV2126 Reactor	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
24RX	24RE	Condensate Receiver from Condenser (3-25CD1)	--	--	NA
25CX	25AE	Centrifuge	--	--	NA
25EX	22QE	Industrial hygiene vent on Wet Bin	--	--	22QC
DRUM22	22QE	Industrial hygiene vent on drumming station	--	--	22QC

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
22QC	21AY, 21WX, 22GX, 23AX, 25CX, DRUM22	22QE	Dust Collector	NA

Product/Process Area – UV2908					
05 LX	05LE	Reactor (2-5K8) with Condenser (3-5CD8 & 3-5CD8A)	--	--	05KC
05LX	05ME	Industrial hygiene vent on Reactor	--	--	NA
05NX	05NE	Condensate Receiver (05NX); Vacuum Jet (3-6VJ7)	--	--	NA
06BX	05NE	Hot Well for Vacuum Jets (3-6VJ7)	--	--	NA
06NX	05LE	Split Tank with Condenser (3-6CD8)	--	--	05KC
06QX	06QE	Salt Wash Tank	--	--	NA
06SX	06SE	Wash/Dehydration Reactor with Condensers (N-6CD1&N-6CD1A)	--	--	NA
102X	11ME	Mother Liquor Tank (S-10T2)	--	--	10VC, 15VC
103X	11ME	Mother Liquor Tank (S-10T3)	--	--	10VC, 15VC
111X	11ME	Mother Liquor Tank (S-11T1)	--	--	10VC, 15VC
112X	11ME	Mother Liquor Tank (S-11T2)	--	--	10VC, 15VC
144X	11ME	Mother Liquor Tank (S-14T4)	--	--	14VC, 15VC
153X	11ME	Mother Liquor Tank (S-15T2)	--	--	14VC, 15VC
1-21CV1	NA	Conveyor	--	--	NA
12LX	12CE	Centrifuge Feed Tank (2-12K2) with Condenser (3-13CD1)	--	--	18VC, 11VC
12LX	12DE	Industrial hygiene vent on Centrifuge Feed Tank	--	--	NA
13BY	13GE	Condensate Receiver (1-13T2)	--	--	NA
13GX	13GE	Vacuum Pump (1-13P1)	--	--	NA
13HX	13HE	Centrifuge (3-13W1)	--	--	NA
13JX	13GE	Dryer (1-13D1) and Condenser (1-13CD1)	--	--	NA
13JX	13JE	Industrial hygiene vent on Dryer	--	--	13JC
13KX	NA	Dry Bin (1-13BN1)	--	--	NA
13LX	NA	Screener (1-13SCR1)	--	--	NA
13MX	NA	Conveyor (1-13SCV1)	--	--	NA
13NX	13JE	Industrial hygiene vent on Bagger (1-13BAG1)	--	--	13JC
13HY	NA	Wet Bin (2-13BN1)	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
14CX	14CE	Wash Tank (3-14T1)	--	--	NA
14FX	14BE	Reactor (2-14K2) and Condensers (3-14CD2 & 3-14CD4)	--	--	NA
14FX	14EE	Industrial hygiene vent on Reactor (2-14K2)	--	--	NA
14GY	14GE	Condensate Receiver and Condenser (1-14CD1)	--	--	NA
14HX	14DE	Tank and Condensers (3-14CD1 & 3-14CD3)	--	--	NA
14JX	15EE	Industrial hygiene vent on Sparkler Filter	--	--	NA
15BX	13JE	Industrial hygiene vent on Dryer	--	--	13JC
15BX	14GE	Vacuum Dryer	--	--	NA
15CX	14GE	Vacuum Pump	--	--	NA
15EX	15EE	Centrifuge	--	--	NA
15EY	NA	Wet Bin	--	--	NA
15FX	15FE	Wash Tank	--	--	NA
15PX	NA	Dry Bin	--	--	NA
15QX	NA	Screener	--	--	NA
16UX	16CE	Reactor with Condenser (3-16CD1 & 3-16CD5)	--	--	NA
16UX	18JE	Industrial hygiene vent on Reactor (16UX)	--	--	NA
16WX	16BE	Vacuum Strip Crystallizer with Condenser (3-16CD2)	--	--	NA
16WX	18JE	Industrial hygiene vent on Vacuum Strip Crystallizer	--	--	NA
16YX	NA	Conveyor	--	--	NA
16ZX	13JE	Industrial hygiene vent on Bagger	--	--	13JC
17AX	17AE	Methanol Drown Tank	--	--	18VC, 11VC
17JX	17QE	Mix Tank	--	--	17VC
17PX	17QE	Condensate Receiver and Condensers (3-16CD3 & 3-16CD4)	--	--	17VC
17PX	18JE	Industrial hygiene vent on Condensate Receiver (17PX)	--	--	NA
17QX	17QE	Vacuum Pump	--	--	NA
18SX	18ME	Hold Tank with Condenser (3-18CD1)	--	--	18VC
20BX	22BE	Condensate Receiver	--	--	NA
20KX	20KE	Reactor (2-19K1)	--	--	NA
20KX	21DE	Industrial hygiene vent on Reactor (2-19K1)	--	--	NA
20KX	20KE	Centrifuge Feed Tank	--	--	NA
20KX	21DE	Industrial hygiene vent on Centrifuge Feed Tank	--	--	NA
20PX	20PE	Split Receiver	--	--	NA
21AX	21AE	Centrifuge	--	--	NA
21AY	22QE	Industrial hygiene vent on Wet Bin	--	--	22QC
21WX	22QE	Industrial hygiene vent on Bagger	--	--	22QC
24MX	24ME	Strip Kettle (2-24K1)	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
22BX	22BE	Dryer with Condensate Receiver (20BX) and Condenser (2-21CD1)	--	--	NA
22BX	22QE	Industrial hygiene vent on Dryer	--	--	22QC
22CX	22BE	Condensate Receiver	--	--	NA
22DX	22BE	Dryer with Condenser (2-22CD1)	--	--	NA
22DX	22QE	Industrial hygiene vent on Dryer	--	--	22QC
24BX	24BE	Wash Tank (3-24T1)	--	--	NA
24BX	24BE	Methanol Tank	--	--	NA
24JX	24GE	Splitter Bowl	--	--	NA
24MX	24FE	Industrial hygiene hood over Crystallizer Strip Kettle	--	--	NA
24MX	24ME	Crystallizer Strip Kettle	--	--	NA
24NX	24ME	Condensate Receiver from Condenser (3-25CD2)	--	--	NA
24PX	24PE	Vacuum Jets & Hot Well	--	--	NA
24QX	24RE	UV2908 Reactor	--	--	NA
24QX	24FE	Industrial hygiene hood over UV2908 Reactor	--	--	NA
24RX	24RE	Condensate Receiver from Condenser (3-25CD1)	--	--	NA
24YX	24FE	Industrial hygiene hood over Sparkler Filter	--	--	NA
25CX	25AE	Centrifuge	--	--	NA
25EX	22QE	Industrial hygiene vent on Wet Bin	--	--	22QC
26FX	22BE	Agitated Filter Dryer (2-26F1)	--	--	NA
26HX	26GE	Packaging Unit (1-26BAG1)	--	--	26GX
DRUM22	22QE	Industrial hygiene vent on Packer (21WX) drumming station	--	--	22QC
DRUM23	23AE	Industrial hygiene vent on Packer (23AX) drumming station	--	--	23AC

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
05KC	05LX	05LE	Scrubber	NA
10VC, 15VC	102X, 103X, 111X, 112X	11ME	Vapor Return	11MV
13JC	13NX, 15BX, 16ZX	13JE	Dust Collector	NA
14VC, 15VC	144X, 153X	11ME	Vapor Return	11MV
17VC	17GX, 17JX, 17PX	17QE	Vapor Return	NA
18VC, 11VC	12LX, 18SX	12CE, 18ME	Vapor Return	NA
22QC	21AY, 22BX, DRUM22, 21WX, 22DX, DRUM23, 23AX, 25EX	22QE	Dust Collector	NA
23AC	DRUM23	23AE	Dust Collector	NA
26GX	26HX	26GE	Dust Collector	NA

Product/Process Area – UV3638					
05LX	05LE	Reactor with Condenser (3-5CD8, 3-5CD8A)	--	--	05KC
05LX	05ME	Industrial hygiene vent on Reactor	--	--	NA
06SX	06SE	Wash/Dehydration Reactor with Condensers (N-6CD1 & N-6CD1A)	--	--	NA
102X	11ME	Mother Liquor Tank	--	--	10VC, 15VC
103X	11ME	Mother Liquor Tank	--	--	10VC, 15VC
111X	11ME	Mother Liquor Tank	--	--	10VC, 15VC
112X	11ME	Mother Liquor Tank	--	--	10VC, 15VC
1-21CV1	NA	Conveyor	--	--	NA
12LX	12CE	Centrifuge Feed Tank with Condenser (3-13CD1)	--	--	18VC, 11VC
12LX	12DE	Industrial hygiene vent on Centrifuge Feed Tank	--	--	NA
13HX	13HE	Centrifuge	--	--	NA
13HY	NA	Wet Bin	--	--	NA
144X	11ME	Mother Liquor Storage Tank	--	--	14VC, 15VC
14CX	14CE	Wash Tank	--	--	NA
14FX	14BE	Reactor and Condensers (3-14CD2 & 3-14CD4)	--	--	NA
14FX	14EE	Industrial hygiene vent on Reactor (14FX)	--	--	NA
14HX	14DE	Reactor and Condensers (3-14CD1 & 3-14CD3)	--	--	NA
14HX	14EE	Industrial hygiene vent on Reactor (14HX)	--	--	NA
153X	11ME	Mother Liquor Storage Tank	--	--	14VC, 15VC
15EX	15EE	Centrifuge	--	--	NA
15EY	NA	Wet Bin	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
15FX	15FE	Wash Tank	--	--	NA
16JX	17QE	TLC Mix Tank	--	--	NA
16JX	18JE	Industrial hygiene vent on Split Recycle (16JX)	--	--	NA
16UX	16CE	Reactor with Condenser (3-16CD1 & 3-16CD5)	--	--	NA
16UX	18JE	Industrial hygiene vent on Reactor (16UX)	--	--	NA
16WX	16BE	Vacuum Strip Crystallizer with Condenser (3-16CD2)	--	--	NA
16WX	18JE	Industrial hygiene vent on Reactor (16WX)	--	--	NA
17AX	17AE	Methanol recycle tank	--	--	18VC, 11VC
17GX	17QE	Split Tank	--	--	17VC
17JX	17QE	Split Tank	--	--	17VC
17PX	17QE	Condensate Receiver and Condensers (3-16CD3 & 3-16CD4)	--	--	NA
17PX	18JE	Industrial hygiene vent on Condensate Receiver	--	--	NA
18SX	18ME	Centrifuge Tank with Condenser (3-18CD1)	--	--	18VC, 11VC
18SX	18SE	Industrial hygiene vent on Centrifuge Tank	--	--	NA
20BX	22BE	Condensate Receiver	--	--	NA
20KX	21DE	Industrial hygiene hood over Centrifuge Tank (2-19K1)	--	--	NA
	20KE	Centrifuge Tank/Drumming Tank with condenser 3-19CD1	--	--	NA
20RX	20KE	Knock-out Pot	--	--	NA
21AX	21AE	Centrifuge #4	--	--	NA
21AY	22QE	Wet Bin #4	--	--	22QC
21WX	22QE	Industrial hygiene hood over UV-1164 Packer & Drumming Station	--	--	22QC
22BX	22BE	Dryer with Condensate Receiver (20BX) and Condenser (2-21CD1)	--	--	NA
	22QE	Industrial hygiene vent on Dryer	--	--	22QC
22CX	22BE	Condensate Receiver	--	--	NA
22DX	22BE	Vacuum Tumble Dryer (1-22D1)	--	--	NA
	22QE	Industrial hygiene hood over Vacuum Tumble Dryer (1-22D1)	--	--	22QC
22PX	22BE	Vacuum Pump	--	--	NA
23AX	22QE	Industrial hygiene hood over UV-1164 Packer & Drumming Station	--	--	22QC
23PX	23DE	Mix Tank (3-23T8)	--	--	23HC
24BX	24BE	Wash Tank (3-24T1)	--	--	NA
24MX	24ME	Crystallizer Strip Kettle with Condenser (3-25CD2)	--	--	NA
24MX 24QX	24FE	Industrial hygiene hood over UV-1164 Reactor (2-24K2), Strip Kettle (2-24K1)	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
24NX	24ME	Condensate Receiver	--	--	NA
24PX	24PE	Condensate Receiver	--	--	NA
24QX	24GE	UV-1164 Reactor	--	--	NA
24RX	24RE	Condensate Receiver	--	--	NA
24JX	24GE	Splitter Bowl	--	--	NA
25CX	25AE	Centrifuge #5	--	--	NA
25EX	25AE	Wet Bin #5	--	--	NA
25HX	23NE	MIBK Storage	--	--	23HC
26FX	22BE	Agitated Filter Dryer (2-26F1)	--	--	NA
26HX	26GE	Packaging Unit (1-26BAG1)	--	--	26GX
DRUM13	13JE	Industrial hygiene vent on drumming station below Wet Bin (13HY)	--	--	13JC

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
05KC	05LX	05LE	Scrubber	NA
10VC, 15VC	102X, 103X, 111X, 112X	11ME	Vapor Return	11MV
14VC, 15VC	144X, 153X	11ME	Vapor Return	11MV
17VC	17GX, 17JX, 17PX	17QE	Vapor Return	NA
18VC, 11VC	12LX, 18SX	12CE, 18ME	Vapor Return	NA
13JC	DRUM13	13JE	Dust Collector	NA
22QC	DRUM22, 21WX, 22BX, 22DX, 23AX	22QE	Dust Collector	NA
23HC	23PX, 25HX	23DE	Vapor Return	NA
26GX	26HX	26GE	Dust Collector	NA

Product/Process Area – UV-3638 IA Purification					
20KX	20KE	Reactor 2-19K1 with condenser 3-19CD1	--	--	NA
20RX	20KE	Knock-out Pot	--	--	NA
22CX	22BE	Condensate Receiver	--	--	NA
24BX	24BE	Wash Tank	--	--	NA
24JX	24GE	Splitter Bowl	--	--	NA
24MX	24ME	Strip Kettle	--	--	NA
24NX	24ME	Condensate Receiver	--	--	NA
24PX	24PE	Vacuum Jet (LR-24VJ1)	--	--	NA
24QX	24GE	Charge & Heat Up Kettle with Condenser 3-25CD1	--	--	NA
24RX	24RE	Condensate Receiver	--	--	NA
25CX	25AE	Centrifuge	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
25EX	22QE	Industrial hygiene hood over Wet Bin	--	--	22QC
26FX	22BE	Agitated Filter Dryer (2-26F1)	--	--	NA
26HX	26GE	Packaging Unit (1-26BAG1)	--	--	26GX

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
22QC	21AY, 22BX, 21WX, 22DX, 23AX, 25EX	22QE	Dust Collector (RF-22DC1)	NA
26GX	26HX	26GE	Dust Collector	NA

Product/Process Area – Aerosol GPG-N					
21DX	20BE	Reactor with condensers 3-22CD1 and 3-22CD1A	--	--	NA
	21DE	Industrial hygiene hood over reactor	--	--	NA
22KX	20BE	Splitter Bowl	--	--	NA
20PX	20PE	Split Receiver	--	--	NA
20EX	20EE	Condensate Receiver	--	--	NA
20FX	20DE	Vacuum Jet (3-19VJ1)	--	--	NA
24TX	24FE	Drumming Station	--	--	NA
Product/Process Area – UHX-2000 and UHX-3000					
20EX	20EE	Condensate Receiver (3-20T1)	--	--	NA
20FX	20DE	Vacuum Jet (3-19VJ1)	--	--	NA
20LX	20AE	Splitter Bowl (2-19SB1)	--	--	NA
20NX	20AE	Strip Kettle (2-19K2) with Condensers 3-20CD1 & 3-20CD1A	--	--	NA
20PX	20PE	Split Receiver (1-20T1)	--	--	NA
21DX	21DE	Industrial hygiene hood over Reactor 21DX	--	--	NA
	20BE	Reactor (2-20K1) with Condensers 3-22CD1 & 3-22CD1A	--	--	NA
22KX	20BE	Splitter Bowl (2-20SB1)	--	--	NA
24TX	24FE	Drumming Station (1-24D1)	--	--	NA
Product/Process Area – Batch Column					
141X	NA	Still Pot	--	--	NA
142X	NA	Batch Column with Condenser (S-14CD1)	--	--	NA
154X	11ME	Reflux Drum with Condenser (S-14CD1)	--	--	11MV
162X	11ME	Recovered Solvent Receiver	--	--	16VC, 11VC
163X	11ME	Wet Solvent Receiver	--	--	16VC, 11VC
S-15EX1	NA	Reboiler	--	--	NA

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
11MV	154X, 162X, 163X	11ME	Water Scrubber	NA
16VC, 11VC	162X, 163X	11ME	Vapor Return	11MV

Product/Process Area – Methanol Column					
074X	11ME	Intermediate Methanol Storage Tank	3/1998	12,000 gal	11VC, 15VC
121A	11ME	Bulk Methanol Storage Tank	1/1988	39,780 gal	11VC, 15VC
112X	11ME	Mother Liquor Storage Tank	--	--	10VC, 15VC
144X	11ME	Mother Liquor Storage Tank	--	--	14VC, 15VC
153X	11ME	Mother Liquor Storage Tank	--	--	14VC, 15VC
193X	193E	Methanol Column with Condenser (S-20CD1)	--	--	NA
203X	193E	Reflux Drum	--	--	NA

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
10VC, 15VC	112X	11ME	Vapor Return	11MV
11VC, 15VC	074X, 121A, 163X	11ME	Vapor Return	11MV
14VC, 15VC	144X, 153X	11ME	Vapor Return	11MV

Product/Process Area – Hazardous Waste Storage Tank					
0T2X	0T2E	Waste Trailer	--	--	27VC
173X	173E	Hazardous Waste Tank (S-17T2) with Condenser (S-17EX1)	7/1991	17,208 gal	27VC

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
27VC	173X, OT2X	173E	Vapor Return	NA

Product/Process Area – Raw Material Storage Tanks					
021X	021E	Morpholine Storage Tank (S-2T1)	2/2007	15,000 gal	NA
25HX	23NE	MIBK Storage Tank (N-25T1)	11/1994	18,000 gal	23HC
063X	063E	TBX Bulk Storage Tank (S-4T3)	5/1987	14,400 gal	NA
075X	075E	Toluene Storage Tank (S-7T3)	5/1989	16,800 gal	075C
121A	11ME	Bulk Methanol Storage Tank (S-10T1)	1/1988	39,780 gal	11VC, 15VC
231X	231E	MIBK Storage Tank (S-23T1)	8/1967	14,400 gal	NA
225X	225E	Brine Storage Tank (S-22T6)	9/2000	21,000 gal	NA
241X	241E	DMF Storage Tank (S-24T1)	9/1967	9,000 gal	NA
243X	243E	ISONOX Storage Tank (S-24T2)	10/1966	12,000 gal	NA
233X	233E	Brine Storage Tank (S-22T6)	7/2001	20,000 gal	NA
271X	271E	Brine Storage Tank (S-27T1)	7/1969	10,000 gal	NA
041X 051X	041E	36% Hydrochloric Acid Bulk Storage Tanks (S-4T1/5T1)	--	--	05VC, 041C, 041S

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
05VC	041X, 051X	041E	Vapor Return	NA
041C	041X, 051X	041E	Water Scrubber	041S
041S	041X, 051X	041E	Venturi Scrubber	NA
075C	07DX, 09DX, 075X	075E	Vapor Return	NA
11VC, 15VC	121A	11ME	Vapor Return	11MV

Product/Process Area – Intermediates & Products Storage Tanks					
074X	11ME	Intermediate Methanol Storage Tank (S-4T4)	3/1998	12,000 gal	11VC, 15VC
076X	076E	Formic Acid Storage Tank (S-7T4)	9/2014	10,000 gal	NA
184X	184E	Toluene Storage Tank (N-18T2)	7/1953	17,000 gal	NA
22MX	22ME	Solvent Storage (2-22K1)	9/1979	2,000 gal	NA

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
11VC, 15VC	074X	11ME	Vapor Return	11MV

Control Device ID	Emission Units Controlled	Emission Point	Control Device Description	Next Control Device in Series
11MV	074X, 102X, 103X, 111X, 112X, 121A, 144X, 153X, 154X, 162X, 163X	11ME	Water Scrubber	11MW
11MW	074X, 102X, 103X, 111X, 112X, 121A, 144X, 153X, 154X, 162X, 163X	11ME	Water Scrubber	11MX
11MX	074X, 102X, 103X, 111X, 112X, 121A, 144X, 153X, 154X, 162X, 163X	11ME	Water Scrubber	11MY
11MY	074X, 102X, 103X, 111X, 112X, 121A, 144X, 153X, 154X, 162X, 163X	11ME	Water Scrubber	11MZ
11MZ**	074X, 102X, 103X, 111X, 112X, 121A, 144X, 153X, 154X, 162X, 163X	11ME	Water Scrubber	NA

* The facility utilizes a flexible process. Some vessels and equipment may have multiple uses and subsequently multiple control devices/emission points. These have been listed multiple times on the equipment list.

**Scrubber 11MZ is an installed spare scrubber, to be used only if one of these scrubbers is non-operational: 11MV, 11MW, 11MX, or 11MY.

2.0. General Conditions

2.1. Definitions

2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.

2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.

2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.

2.2. Acronyms

CAAA	Clean Air Act Amendments	**NO_X**	Nitrogen Oxides
CBI	Confidential Business Information	**NSPS**	New Source Performance Standards
CEM	Continuous Emission Monitor	**PM**	Particulate Matter
CES	Certified Emission Statement	**$PM_{2.5}$**	Particulate Matter less than 2.5 µm in diameter
C.F.R. *or* CFR	Code of Federal Regulations	**PM_{10}**	Particulate Matter less than 10µm in diameter
CO	Carbon Monoxide	**Ppb**	Pounds per Batch
C.S.R. *or* CSR	Codes of State Rules	**Pph**	Pounds per Hour
DAQ	Division of Air Quality	**Ppm**	Parts per Million
DEP	Department of Environmental Protection	**Ppm_V or ppmv**	Parts per Million by Volume
dscm	Dry Standard Cubic Meter	**PSD**	Prevention of Significant Deterioration
FOIA	Freedom of Information Act	**Psi**	Pounds per Square Inch
HAP	Hazardous Air Pollutant	**SIC**	Standard Industrial Classification
HON	Hazardous Organic NESHAP	**SIP**	State Implementation Plan
HP	Horsepower	**SO_2**	Sulfur Dioxide
lbs/hr	Pounds per Hour	**TAP**	Toxic Air Pollutant
LDAR	Leak Detection and Repair	**TPY**	Tons per Year
M	Thousand	**TRS**	Total Reduced Sulfur
MACT	Maximum Achievable Control Technology	**TSP**	Total Suspended Particulate
MDHI	Maximum Design Heat Input	**USEPA**	United States Environmental Protection Agency
MM	Million	**UTM**	Universal Transverse Mercator
MMBtu/hr *or* mmbtu/hr	Million British Thermal Units per Hour	**VEE**	Visual Emissions Evaluation
MMCF/hr *or* mmcf/hr	Million Cubic Feet per Hour	**VOC**	Volatile Organic Compounds
NA	Not Applicable	**VOL**	Volatile Organic Liquids
NAAQS	National Ambient Air Quality Standards		
NESHAPS	National Emissions Standards for Hazardous Air Pollutants		

2.3. Authority

This permit is issued in accordance with West Virginia air pollution control law W.Va. Code §§ 22-5-1. et seq. and the following Legislative Rules promulgated thereunder:

2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation*;

2.4. Term and Renewal

2.4.1. This permit supersedes and replaces previously issued Permit R13-~~2156V~~2156W. This Permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any other applicable legislative rule;

2.5. Duty to Comply

2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Applications R13-0190, R13-0671, R13-0794, R13-1006, R13-1018, R13-1082B, R13-1114C, R13-1535C, R13-1735, R13-2156, R13-2156A, R13-2156B, R13-2156C, R13-2156D, R13-2156E, R13-2156F, R13-2156G, R13-2156H, R13-2156I, R13-2156J, R13-2156K, R13-2156L, R13-2156M, R13-2156N, R13-2156O, R13-2156P, R13-2156Q, R13-2156R, R13-2156S, R13-2156T, R13-2156U, R13-2156V, R13-2156W, R13-2156X and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to;
[45CSR§§13-5.11 and -10.3.]

2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;

2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;

2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses, and/or approvals from other agencies; i.e., local, state, and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

2.7. Duty to Supplement and Correct Information

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

2.8. Administrative Update

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-4.]

2.9. Permit Modification

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-5.4.]

2.10 Major Permit Modification

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.
[45CSR§13-5.1]

2.11. Inspection and Entry

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

2.12. Emergency

2.12.1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by

improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are met.

2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;

b. The permitted facility was at the time being properly operated;

c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

2.12.5 The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

2.13. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

2.14. Suspension of Activities

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

2.15. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege.

2.16. Severability

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

2.17. Transferability

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. **[45CSR§13-10.1.]**

2.18. Notification Requirements

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

2.19. Credible Evidence

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.

3.0. Facility-Wide Requirements

3.1. Limitations and Standards

3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.
[45CSR§6-3.1.]

3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.
[45CSR§6-3.2.]

3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management, and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.
[40CFR§61.145(b) and 45CSR§34]

3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.
[45CSR§4-3.1] ***[State Enforceable Only]***

3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.
[45CSR§13-10.5.]

3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.
[45CSR§11-5.2.]

3.2. Monitoring Requirements

[Reserved]

3.3. Testing Requirements

3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling

connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:

    1. The permit or rule evaluated, with the citation number and language;
    2. The result of the test for each permit or rule condition; and,
    3. A statement of compliance or noncompliance with each permit or rule condition.

[WV Code § 22-5-4(a)(14-15) and 45CSR13]

3.4. Recordkeeping Requirements

3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports, and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or

record. At a minimum, the most recent two (2) years of data shall be maintained on site. The remaining three (3) years of data may be maintained off site, but must remain accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.

3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§4. *State Enforceable Only.*]

3.5. Reporting Requirements

3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.

3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

If to the DAQ:
Director
WVDEP
Division of Air Quality
601 57th Street
Charleston, WV 25304-2345

If to the US EPA:
Associate Director
Office of Enforcement and
Compliance Assistance
(3AP20)
U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

3.5.4. Operating Fee

3.5.4.1. In accordance with 45CSR30 – Operating Permit Program, the permittee shall submit a certified emissions statement and pay fees on an annual basis in accordance with the submittal requirements of the Division of Air Quality. A receipt for the appropriate fee shall be maintained on the premises for which the receipt has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

4.0. Source-Specific Requirements

4.1. Limitations and Standards

4.1.1. Vent emissions to the atmosphere from the Building 82 Manufacturing Unit, which consists of the equipment listed in Section 1.0, shall not exceed the emission limitations set forth in Table 4.1.1.

Table 4.1.1. Emission Limits for Building 82 Manufacturing Unit

Pollutant	Emission Limit (TPY)
PM_{10}	6.03
VOC	114.33
THAP	96.73
Formaldehyde*	0.219

* Toxic Air Pollutant (TAP) regulated under 45CSR§27

4.1.2. During all periods of normal operations, process vent air emissions from the emission sources and equipment listed in Section 1.0 shall be routed to and controlled by the associated control devices listed in Section 1.0 prior to venting emissions to the atmosphere. However, the control devices listed in Section 1.0 may be bypassed to perform maintenance and/or repair activities for periods up to 72 hours per calendar year per control device, with the bypass hours counted only when the listed emission group(s) in Appendix A are operating and venting to the respective control device during a bypass event.
[45CSR§13-5.11]

4.1.3. *[Reserved]*

4.1.4. *[Reserved]*

4.1.5. Compliance with the emission limits set forth in Section 4.1.1, shall be demonstrated by calculating emissions for every product in the Building 82 Manufacturing Unit using Emission Master®, emission modeling software, or other appropriate emission/discharge estimation models or calculation methodologies (e.g., ChemCAD®, PlantWare®, USEPA's TANKS 4.0, etc.). When these emissions are calculated, each emission point listed in Section 1.0 with emissions of regulated air pollutants listed in Section 4.1.1 shall be included in the calculations and accounted for in the emission estimates. The emission models and other calculation methods shall be maintained current for all processes, process modifications and new product variants. The Director of the Division of Air Quality may specify or may approve other valid methods for compliance determination when he or she deems it appropriate and necessary.
[45CSR§13-5.11]

4.1.6. Emissions to the atmosphere from the following emission sources subject to 45CSR§7 – "To Prevent and Control Particulate Matter Air Pollution from Manufacturing Processes and Associated Operations" shall not exceed the emission limitations set forth in Sections 4.1.13 and 4.1.14.

Table 4.1.6. 45CSR§7 Sources Emission Limits

Product or Process Name	Emission Point ID	Source ID	Pollutant
UV3346, UV3529, UV4593, UV4611, UV4801, UV4802, UV6435, UV6460	05KE	08BX (2-8K8)	PM_{10} Opacity
A1846, UV2908, UV3638, S10104, XD-5002	05ME	05LX (2-5K8)	PM_{10} Opacity
UV3346, UV3529, UV4593, UV4611, UV4801, UV4802,UV6435, UV6460	06FE	06CX (2-6K3)	PM_{10} Opacity

Product or Process Name	Emission Point ID	Source ID	Pollutant
UV3346, UV3529, UV4593, UV4611, UV4801, UV4802,UV6435, UV6460	10IE	10CX (2-10K3)	PM_{10} Opacity
UV3346, UV3529, UV4593, UV4611, UV4801, UV4802,UV6435, UV6460	07CE	07AX (3-7K4)	PM_{10} Opacity
UV3346, UV3529, UV4593, UV4611, UV4801, UV4802,UV6435, UV6460	07FE	08AX, 07KX (2-7K8)	PM_{10} Opacity
UV3346, UV3529, UV4593, UV4611, UV4801, UV4802,UV6435, UV6460	08RE	09CX (2-9K4)	PM_{10} Opacity
UV3346, UV3529, UV4593, UV4611, UV4801, UV4802,UV6435, UV6460	08RE	DRUM08	PM_{10} Opacity
UV3346, UV3529, UV4593, UV4611, UV4801, UV4802,UV6435, UV6460	08RE	10TX	PM_{10} Opacity
UV3346, UV3529, UV4593, UV4611, UV4801, UV4802,UV6435, UV6460	12DE	11AX (2-11K1)	PM_{10} Opacity
A1790, A2777, UV3638, UV2908	13JE	DRUM13	PM_{10} Opacity
A1790, UV2908	14EE	14HX (2-14K1)	PM_{10} Opacity
A1790, UV2908	14EE	14FX (2-14K2)	PM_{10} Opacity
A1790, UV2908, UV3638	18JE	16UX (2-16K1)	PM_{10} Opacity
UV3638	18JE	16WX (2-16K2)	PM_{10} Opacity
UV3638	18JE	16JX (3-16K1)	PM_{10} Opacity
UV2908, S-10333	21DE	20KX (2-19K1)	PM_{10} Opacity
Aerosol GPG-N	21DE	21DX(2-20K1)	PM_{10} Opacity
A1790, A2777, UV416	22QE	22BX (1-21D1)	PM_{10} Opacity
Triazines Solids (UV1164), A425, A1790, A2777, UV416, UV1164, UV2126, UV2908, UV3638	22QE	21WX, 23AX, DRUM22	PM_{10} Opacity
CA-150, UV2908	23AE	DRUM23	PM_{10} Opacity
A1790, CIP200, UV2908	24FE	24MX (2-24K1)	PM_{10} Opacity
A425, A1790, CIP200, UV1164, UV3638, UV416, UV2908	24FE	24QX (2-24K2)	PM_{10} Opacity
UV2126	24GE	LIQUI-PAK	PM_{10} Opacity
Aero 7260HFP, Aero 8860GL, ACCO-PHOS 950, S-10333	23ME	23LX (3-23K2)	PM_{10} Opacity
CA-150	25BE	25BX(2-25D1)	PM_{10} Opacity
A425, A1790, CA-150, UV1164, UV2908, UV3638, UV36381A	26GE	26GX	PM_{10} Opacity
A1846, UV2908, UV3638	05LE	05LX (2-5K8)	HCl Opacity
Waste Trailer	0T2E	0T2X (T/T)	H_3PO_4 Opacity
A1790	12CE	12LX (2-12K2)	H_3PO_4 Opacity

Product or Process Name	Emission Point ID	Source ID	Pollutant
A1790	13HE	13HX (3-13W1)	H_3PO_4 Opacity
A1790	15EE	13EX (3-15W1)	H_3PO_4 Opacity
A1790	18ME	18SX (2-18K1)	H_3PO_4 Opacity
A1790	21AE	21AX (3-21W1)	H_3PO_4 Opacity
UV2126	22GE	22GX (3-22D1)	H_3PO_4 Opacity
UV2126	24BE	24MX (2-24K1)	H_3PO_4 Opacity
UV2126	24ME	24MX (2-24K1)	H_3PO_4 Opacity
UV2126	25AE	25CX (3-25W1)	H_3PO_4 Opacity
Storage Tanks	041E	041X/051X (S-4T1/S-5T1)	HCl Opacity
Storage Tanks	173E	173X (S-17T2)	H_3PO_4 Opacity
Aero 7260HFP, Aero 8860GL, ACCO-PHOS 950, S-10333	20BE	21DX (2-20K1)	H_3PO_4 Opacity
Aero 7260HFP, Aero 8860GL, ACCO-PHOS 950	20BE	21DX (2-20K1)	H_2SO_4 Opacity

[Compliance with this streamlined condition shall insure compliance with 45CSR§§7-3.1, -4.1, and -4.2]

4.1.7. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR§13-5.11.]

4.1.8. The control devices listed in Appendix A shall be operated in accordance with the required monitoring parameters and inspected and maintained in accordance with the Inspection & Preventive Maintenance schedules listed in Appendix A. Missed readings for each scrubber monitoring parameter data element specified in Appendix A shall not exceed 5% of the total required readings in a rolling twelve (12) month period.

4.1.8.1. The following scrubber control devices shall not recirculate or reuse scrubber liquor; these scrubbers shall use once through water as their scrubbing liquor:

Table 4.1.8.1. Scrubbers Requiring Once Through Water

Control Device ID	Control Device Description
041C	Packed Bed Scrubber
041S	Venturi Scrubber

[45CSR§13-5.11]

4.1.9. The permittee shall comply with all applicable requirements of 40 C.F.R. 63, Subpart FFFF – National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing".

4.1.10. *[Reserved]*

4.1.11. The permittee shall not cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity, except as noted in Sections 3.1.7. and 4.1.12. Process source operations subject to the opacity limitation are indicated in Section 4.1.6.
[45CSR§7-3.1]

4.1.12. The opacity provisions of Section 4.1.11 shall not apply to smoke and/or particulate matter emitted from any process source operation which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.
[45CSR§7-3.2]

4.1.13. The permittee shall not cause, suffer, allow or permit particulate matter to be vented into the open air from any type of source operation or duplicate source operation, or from all air pollution control equipment installed on any type source operation or duplicate source operation in excess of the quantity specified under type 'a' source operation in Table 45-7A found at the end of 45CSR§7. Process source operations subject to the particulate weight limitation are indicated in Section 4.1.6.
[45CSR§7-4.1]

4.1.14. Mineral acids shall not be released from any type source operation or duplicate source operation or from all pollution control equipment installed on any type source operation or duplicate source operation in excess of the quantity given in Table 4.1.14. Process source operations subject to the mineral acid concentration limitation are indicated in Section 4.1.6.

Table 4.1.14. Mineral Acid Stack Gas Concentration Limitations

Mineral Acid	Allowable Stack Gas Concentration (mg/dscm)
Sulfuric Acid Mist (H_2SO_4)	35
Nitric Acid Mist and/or Vapor (HNO_3)	70
Hydrochloric Acid Mist and/or Vapor (HCl)	210
Phosphoric Acid Mist and/or Vapor (H_3PO_4)	3

[45CSR§7-4.2]

4.1.15. Due to unavoidable malfunction of equipment, emissions exceeding those set forth in Sections 4.1.13. and 4.1.14. may be permitted by the Director for periods no to exceed ten (10) days upon specific application to the Director. Such application shall be made within twenty-four (24) hours of the malfunction. In cases of major equipment failure, additional time periods may be granted by the Director provided a corrective program has been submitted by the permittee and approved by the Director.
[45CSR§7-9.1]

4.1.16. Maintenance operations shall be exempt from the provisions of 45CSR7-4, and the emission limitations set forth in Sections 4.1.13. and 4.1.14., provided that, at all times the owner or operator conducts maintenance operations in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Director, which may include, but not limited to, monitoring results, opacity observations, review of operating and maintenance procedures and inspection of the source.
[45CSR§7-10.3]

4.1.17. The following equipment, listed in Table 4.1.17, in the Building 82 Manufacturing Unit is used on an as-needed basis and may not be operated for extended periods of time. This equipment is exempt from Section 2.14, but remains subject to Section 3.1.5. Written notification shall be provided to the Director in the event of permanent shutdown of this equipment.

Table 4.1.17. Intermittent Use Equipment

Equipment ID	Source Description
0T3X	Anhydrous HCl Bulk Tube Trailer
23NC	Venturi Scrubber
11NX (N-11T1)	Tank
11HX (2-11K3)	Still Pot (11HX)/Condenser (3-11CD1)/Mist Eliminator (3-11ME1)
11EX (3-11K1)	Tank
26DX(2-26K1)	Tank
27FX	Tank
27KX	Tank
3-27EX-5	Condenser
23BX	Tank
215X	Column with Condensers (N-21CD3, N-21CD4, & 3-21EX1)
21FX	Tank
21GX	Tank
21QX	Tank
227X	Tank with Condenser (N-22CD1)
228X	Stage 2 Column with Condensers (N-22CD6, N-22CD8, & 3-21EX1)
N-21EX1	Reboiler
N-21-EX2	Preheater
N-22EX5	Rototherm
N-22EX7	Cooler
281X	Storage Tank
303X	Storage Tank

[45CSR§13-5.11]

4.2. Monitoring Requirements

4.2.1. The permittee shall perform monitoring of all equipment parameters listed in Appendix A per the minimum data collection frequency and per the data averaging period as indicated.

4.2.2. For the purpose of determining compliance with the opacity limits of 45CSR§§7-3.1 and -3.2, the permittee shall conduct visible emission checks or opacity monitoring and recordkeeping for all emission points and equipment subject to an opacity limit, including those emission sources listed in Table 4.1.6.

Monitoring shall be conducted initially at least once per month with a maximum of forty-five (45) days between consecutive readings. After three consecutive monthly readings in which no visible emissions are observed from any of the subject emission points, those emission points will be allowed to conduct visible emission checks or opacity monitoring once per calendar quarter. If visible emissions or opacity are observed during a quarterly monitoring from an emission point(s), then that emission point(s) with observed emissions or opacity shall be required to revert to monthly monitoring. Any emission point that has reverted to monthly monitoring shall be allowed to again conduct quarterly visible emission checks or opacity monitoring only after three consecutive monthly readings in which no visible emissions are observed from the subject emission point.

These checks shall be conducted by personnel trained in the practices and limitations of 40CFR60 Appendix A, Method 9 or Method 22, or 45CSR§7A, during periods of normal operation of emission sources that vent from the referenced emission points for a sufficient time interval to determine if there is a visible emission. For observations of visible emissions from any emission point(s) which follows a water scrubber, when condensed water vapor is present in the plume as it emerges from the emission outlet, opacity observations shall be made beyond the point in the plume at which condensed water vapor is no longer visible; the observer shall record the approximate distance from the emission outlet to the point in the plume at which the observations are made.

If visible emissions are identified during the visible emission check, or at any other time regardless of operations, the permittee shall conduct an opacity reading using the procedures and requirements of 45CSR§7A within seventy-two (72) hours of the first signs of visible emissions. A 45CSR§7A evaluation shall not be required if the visible emission condition is corrected within seventy-two (72) hours after the visible emission and the sources are operating at normal conditions.

4.2.3. The permittee shall monitor and record monthly the following data pertaining to any control device bypass events per Section 4.1.2: Identification of the control device bypassed, the date and the duration of the bypass, the nature of the repair or maintenance conducted, and the quantity of regulated air pollutants emitted during the bypass time period.

4.3. Testing Requirements

4.3.1. *[Reserved]*

4.4. Recordkeeping Requirements

4.4.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:

a. The date, place as defined in this permit, and time of sampling or measurements;

b. The date(s) analyses were performed;

c. The company or entity that performed the analyses;

d. The analytical techniques or methods used;

e. The results of the analyses; and

f. The operating conditions existing at the time of sampling or measurement.

4.4.2. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

4.4.3. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

a. The equipment involved.

b. Steps taken to minimize emissions during the event.

c. The duration of the event.

d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

e. The cause of the malfunction.

f. Steps taken to correct the malfunction.

g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

4.4.4. The emission/discharge estimation models and calculation methodologies developed in Section 4.1.5, as well as production records for each calendar month shall be maintained on site for a period of five (5) years. Certified copies of these records shall be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.
[45CSR§13-5.11]

4.4.5. The permittee shall maintain on site for a period of five (5) years a tabulation of actual emissions/discharges generated using those methods specified in Section 4.1.5, over the most recent continuous rolling twelve (12) calendar month period, showing emission/discharge totals for the regulated air pollutants listed in Sections 4.1.1 and 4.1.3. Certified copies of these records shall be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.
[45CSR§13-5.11]

4.4.6. Records of all monitoring data required by Section 4.2.1 shall be maintained on site as follows:

a. All monitoring data required by Section 4.2.1, as specified in Appendix A, shall be maintained on site for a period of no less than five (5) years. Such records may include strip charts, electronic data system records, and hand-written data forms. Certified copies of these records shall be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

b. For each out-of-range occurrence of a monitoring parameter value for the averaging period specified in Appendix A, records stating the starting date/time and duration of the control device's out-of-range alarm or reading, the cause of the out-of-range parameter, and any corrective actions taken, shall be maintained on site for a period of no less than five (5) years from the date of monitoring, sampling, or measurement. Certified copies of these records

shall be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

c. Missed readings for each scrubber monitoring parameter data element specified in Appendix A shall be recorded and compared to the maximum allowable missed readings limitation in Section 4.1.8. A rolling consecutive twelve (12) month tabulation of missing readings for each scrubber monitoring parameter element shall be maintained on site for a period of no less than five (5) years. Certified copies of these records shall be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

d. In the event that an applicable rule or regulation (such as the MON MACT) requires monitoring more stringent than that required by Section 4.2.1, the more stringent provisions shall apply. Any such required monitoring data shall be maintained on site for a period of no less than five (5) years. Certified copies of these records shall be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

[45CSR§13-5.11]

4.4.7. Per the monitoring required by Section 4.2.2, records shall be maintained documenting the date and time of each visible emission check, the name of the responsible observer, the results of the check, and, if necessary, all corrective actions taken. Should an opacity reading be required per 45CSR§7A, records shall be maintained per the procedures of 45CSR§7A-2.

4.4.8. Compliance with Sections 4.4.2 and 4.4.3 may be shown by keeping similar records required by the requirements of the Startup, Shutdown, and Malfunction Plan as contained in 40CFR63 Subpart A and as may be amended by specific MACT subpart requirements

4.4.9. The permittee shall keep readily accessible records showing the dimension of the Bulk Methanol Storage Tank (121A) and an analysis showing the capacity of the storage vessel. This record shall be maintained for the life of the storage vessel. The permittee shall also maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period, as pertains to the Bulk Methanol Storage Tank (121A).
[Compliance with this streamlined condition shall insure compliance with 40CFR§§60.116b(a) through (c)]

4.4.10. The permittee shall comply with all applicable requirements of 40 C.F.R. 63, Subpart EEEE – "National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)" (OLD MACT).

4.5. Reporting Requirements

4.5.1. If the permittee emits any HAPs or TAPs other than those listed in Appendix B from the Building 82 Manufacturing Unit, at an estimated annual emission rate of 50 ppy or greater, the permittee shall provide written notification to the Director of the Division of Air Quality within thirty (30) days of knowledge of such emission. This written notification shall include the potential to emit (in pph and tpy) for each new HAP or TAP species from each of the newly identified emission points or existing emission points listed in Section 1.0 that emit that HAP or TAP species. This condition in no way limits or restricts the reporting requirements of Section 4.5.3.

If the potential to emit for the TAP is greater than the threshold levels of Table 45CSR27-A, the permittee shall either employ BAT at all chemical process units emitting the toxic air pollutant or shall bring the TAP emissions below threshold levels. A proposed compliance program for the control or reduction of the TAP emissions shall be submitted to the Director within sixty (60) days of the notification required by this section, provided that any source or equipment specifically

subject to a federal regulation or standard shall not be required to comply with provisions more stringent than such regulation or standard.

Upon approval by the Director of the proposed compliance program, the permittee shall apply for a modification of this permit to include the proposed compliance program. This condition shall not be construed to limit the Director's ability to initiate any enforcement action prescribed by the Code as a result of deficiencies, errors, or omissions in the prior compliance plan submitted by the permittee.
[45CSR§13-5.11. and 45CSR§27-3.1.]

4.5.2. *[Reserved]*

4.5.3. The emission to the air of any TAP resulting from an abnormal release or spill in excess of the following amounts shall be reported to the Director or his authorized representative not later than 24-hours after the permittee has knowledge of such emission:

a. For ethylene oxide and vinyl chloride, one (1) pound;
b. For acrylonitrile and butadiene, ten (10) pounds;
c. For all other toxic air pollutants, fifty (50) pounds.

The permittee shall file a written report with the Director stating the details of all such incidents resulting in the emission of more than fifty (50) pounds of any toxic air pollutant within seven (7) days of the occurrence. The owner/operator shall submit to the Director, at his request, records of all abnormal toxic air pollutant discharges to the air.
[45CSR§27-10.4.] ***[State Enforceable Only]***

4.5.4. The permittee shall notify the USEPA Administrator and the Director of the Division of Air Quality within thirty (30) days when the maximum true vapor pressure of the VOL stored in the Bulk Methanol Storage Tank (121A) exceeds a maximum true vapor pressure of 27.6 kPa.
[40CFR§60.116b(d)]

4.5.5. Written notification of any revisions of the Building 82 Manufacturing Unit equipment/emission units, control devices, or emissions points as listed in Sections 1.0, 4.1.6, and 4.1.17, or Appendix A of this permit, shall be submitted to the Director of the Division of Air Quality by August 15th for the calendar semi-annual time period of January 1st through June 30th, and by February 15th for the calendar semi-annual time period of July 1st through December 31st in which the revision occurred. This section does not limit the permittee's ability to request a permit administrative update or modification pursuant to Sections 2.8, 2.9, or 2.10, and in no way limits the permittee's responsibility to obtain a modification of this permit pursuant to 45CSR§13-5 prior to activities that would constitute a modification or major modification as defined under 45CSR§13, 45CSR§14, or 45CSR§19 (whichever is appropriate). **[45CSR§13-5.11]**

APPENDIX A – Parametric Monitoring

Control Device ID	Description	Applicable Regulations	Emission Group(s) *	Monitoring Parameter	Parameter Value	Data Collection Frequency	Data Averaging Period	Inspection/ Preventative Maintenance Frequency
041C	Packed Bed Scrubber	40 C.F.R. 63, Subpart FFFF – HAP; 45CSR7 – Mineral Acids	A1846 (HCl Storage)	Inlet water (liquor) flowrate	≥ 1.2 gpm	15 minutes[1]	Calendar daily	Annual
041S	Venturi Scrubber	40 C.F.R. 63, Subpart FFFF – HAP; 45CSR7 – Mineral Acids	A1846 (HCl Storage)	Inlet water (liquor) flowrate	≥ 3 gpm	15 minutes[1]	Calendar daily	Annual
05VC	Vapor return line	45CSR7 – Mineral Acids	A1846	NA	NA	NA	NA	Annual
05KC	Scrubber	45CSR7 – Mineral Acids	A1846, UV2908, UV3638, S10104, XD-5002	Inlet water (liquor) flowrate	≥ 3 gpm	15 minutes[1]	Calendar daily	Annual
07CC	Scrubber	45CSR7 – PM	UV3346, UV3529, UV4593, UV4611, UV4801, UV4802, UV6435, UV6460	Inlet water (liquor) flowrate	≥ 12 gpm	15 minutes[1]	Calendar daily	Annual
075C	Vapor return line	NA	UV3346, UV3529, UV4593, UV4611, UV4801, UV4802, UV6435, UV6460	NA	NA	NA	NA	Annual
08RC	Dust Collector	45CSR7 – PM	UV3346, UV3529, UV4593, UV4611, UV4801, UV4802, UV6435, UV6460	Section 4.2.2[2]	≤ 20%	Monthly[2]	NA	Annual
08VC	Vapor return line	NA	UV3346, UV3529, UV4593, UV4611, UV4801, UV4802, UV6435, UV6460	NA	NA	NA	NA	Annual
11MV	Scrubber	40 C.F.R. 63, Subpart FFFF – HAP	Batch Column, Methanol Column, Raw Material Storage Tanks	Inlet water (liquor) flowrate	≥ 10.7 gpm	15 minutes[1]	Calendar daily	Annual
11MW	Scrubber	40 C.F.R. 63, Subpart FFFF – HAP	Batch Column, Methanol Column, Raw Material Storage Tanks	Inlet water (liquor) flowrate	≥ 7.8 gpm	15 minutes[1]	Calendar daily	Annual
11MX	Scrubber	40 C.F.R. 63, Subpart FFFF – HAP	Batch Column, Methanol Column, Raw Material Storage Tanks	Inlet water (liquor) flowrate	≥ 7.8 gpm	15 minutes[1]	Calendar daily	Annual
11MY	Scrubber	40 C.F.R. 63, Subpart FFFF – HAP	Batch Column, Methanol Column, Raw Material Storage Tanks	Inlet water (liquor) flowrate	≥ 7.8 gpm	15 minutes[1]	Calendar daily	Annual
11MZ[3]	Scrubber	40 C.F.R. 63, Subpart FFFF – HAP	Batch Column, Methanol Column, Raw Material Storage Tanks	Inlet water (liquor) flowrate	≥ 7.8 gpm	15 minutes[1]	Calendar daily	Annual
10VC	Vapor return line	NA	Batch Column, Methanol Column, Raw Material Storage Tanks	NA	NA	NA	NA	Annual
11VC	Vapor return line	NA	Batch Column, Methanol Column, Raw Material Storage Tanks	NA	NA	NA	NA	Annual
14VC	Vapor return line	NA	Batch Column, Methanol Column, Raw Material Storage Tanks	NA	NA	NA	NA	Annual
15VC	Vapor return line	NA	Batch Column, Methanol Column, Raw Material Storage Tanks	NA	NA	NA	NA	Annual
16VC	Vapor return line	NA	Batch Column, Methanol Column, Raw Material Storage Tanks	NA	NA	NA	NA	Annual
13JC	Dust Collector	45CSR7 – PM	A1790, A2777, UV2908, UV3638	Section 4.2.2[2]	≤ 20%	Monthly[2]	NA	Annual

Control Device ID	Description	Applicable Regulations	Emission Group(s) *	Monitoring Parameter	Parameter Value	Data Collection Frequency	Data Averaging Period	Inspection/ Preventative Maintenance Frequency
17VC	Vapor return line	NA	A1790, UV3638	NA	NA	NA	NA	Annual
18VC	Vapor return line	NA	A1790, UV2908, UV3638	NA	NA	NA	NA	Annual
22QC	Dust Collector	45CSR7 – PM	A425, A1790, A2777, CA150, CIP2 00, UV416, UV1164, UV2126, UV2908, UV3638, UV-3638 IA	Section 4.2.2[2]	≤ 20%	Monthly[2]	NA	Annual
23AC	Dust Collector	45CSR7 – PM	CA-150, UV2908	Section 4.2.2[2]	≤ 20%	Monthly[2]	NA	Annual
23HC	Vapor return line	NA	UV3638	NA	NA	NA	NA	Annual
26GX	Dust Collector	45CSR7-PM	A425, A1790, CA-150, UV1164, UV2908, UV3638, UV36381A	Section 4.2.2[2]	≤ 20%	Monthly[2]	NA	Annual
27VC	Vapor return line	NA	Hazardous Waste Storage Tank	NA	NA	NA	NA	Annual

* The control device requirements apply when the listed emission group(s) are operating and venting to the control device.
[1] Data logging of flow rate at least once every fifteen (15) minutes.
[2] Visual observations/Method 9 opacity reading per the conditions and requirements of and at the frequency specified in Section 4.2.2.
[3] Scrubber 11MZ is an installed spare scrubber, to be used only if one of these scrubbers is non-operational: 11MV, 11MW, 11MX, or 11MY.

APPENDIX B – Hazardous Air Pollutants

CAS No.	Name	Table 45-13A/Rule 27 Toxic Air Pollutant?	Exceeds 45-13A/Rule 27 Threshold?
75-07-0	Acetaldehyde	No	--
79-06-1	Acrylamide	No	--
79-10-7	Acrylic Acid	No	--
98-07-7	Benzotrichloride	No	--
542-88-1	Bis (Chloromethyl) Ether	No	--
95-48-7	o-Cresol	No	--
68-12-2	Dimethyl Formamide	No	--
77-78-1	Dimethyl Sulfate	No	--
100-41-4	Ethylbenzene	No	--
50-00-0	Formaldehyde	Yes	No
7647-01-0	Hydrochloric Acid	No	--
123-31-9	Hydroquinone	No	--
67-56-1	Methanol	No	--
108-88-3	Methyl Isobutyl Ketone	No	--
108-88-3	Toluene	No	--
584-84-9	2, 4 – Toluene Diisocyanate	No	--
121-44-8	Triethylamine	No	--
1330-20-7	Xylenes (isomers & mixtures)	No	--

CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached _____, representing the period beginning _____ and ending _____, and any supporting documents appended hereto, is true, accurate, and complete.

Signature[1] _____ _____
(please use blue ink) Responsible Official or Authorized Representative Date

Name & Title _____ _____
(please print or type) Name Title

Telephone No. _____ Fax No. _____

[1] This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:

a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(i) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), or

(ii) the delegation of authority to such representative is approved in advance by the Director;

b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or

d. The designated representative delegated with such authority and approved in advance by the Director.