February 24, 2017

Assistant Director for Permitting WV
Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, West Virginia 25304

To Whom It May Concern:

Subject: Wendell H. Stone Company dba Stone & Company, Inc.
NSR (45CSR13) Air Permit Application
Morgantown Batch Plant, Morgantown, West Virginia
CEC Project 144-205.0005

Civil & Environmental Consultants, Inc. (CEC) on behalf of Wendell H. Stone Company dba Stone & Company, Inc. (Stone Concrete) is hereby submitting an application for a New Source Review (NSR) Construction Permit to the West Virginia Department of Environmental Protection (DEP), Division of Air Quality (DAQ), for the Morgantown Batch Plant located in Monongalia County, West Virginia. The Morgantown Batch Plant is a Batch Concrete Manufacturing Plant with a NAICS code of 327320. Stone Concrete is submitting the attached 45 CSR 13 air permit application in accordance with West Virginia air quality regulations. One hard copy and two CD's of the permit application are included with this correspondence.

If you have questions concerning the 45CSR13 air permit application, please contact Mr. Brian Henckel at (724) 836-1400.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Benjamin N. Blasingame, P.E.
Project Manager

Kristian A. Macoskey, QEP
Vice President

Enclosure
cc: Mr. Brain Henckel, Stone Concrete

144-205.0005-Air Permit Application-Cover Letter/P

MORGANTOWN BATCH PLANT
BATCH CONCRETE MANUFACTURING FACILITY
WENDELL H. STONE COMPANY DBA STONE & COMPANY, INC

WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY

APPLICATION FOR NSR CONSTRUCTION PERMIT

Prepared for:

WENDELL H. STONE COMPANY DBA STONE & COMPANY, INC
606 McCORMICK AVENUE
CONNELLSVILLE, PA 15425

Prepared by:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 Baldwin Road
Pittsburgh, PA 15205

CEC Project 144-205.0005

February 2017

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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.dep.wv.gov/daq

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

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

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

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

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

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

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

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
Wendell H. Stone Company dba Stone & Company, Inc.

2. Federal Employer ID No. ***(FEIN):***
2 5 1 3 6 3 3 2 1

3. Name of facility *(if different from above):*
Morgantown Batch Plant

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

5A. Applicant's mailing address:
606 McCormick Avenue
Connellsville, PA 15425

5B. Facility's present physical address:
1702 Smithtown Road
Morgantown, WV 26505

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☒ **YES** ☐ **NO**

- If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**
- If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

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

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**

- If **YES,** please explain:

- 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.): Batch Concrete Manufacturing Plant

10. North American Industry Classification System **(NAICS)** code for the facility:
327320

11A. DAQ Plant ID No. (for existing facilities only):
Not Applicable

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
Not Applicable

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**.

When on I-79 take exit 146 (Goshen Road). Head West on Goshen Road for 0.3 miles then take a right onto Smithtown Road. The site will be on the right after 1.5 miles.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
1702 Smithtown Road Morgantown, WV 2605	Morgantown	Monongalia
12.E. UTM Northing (KM): 4379.253	12F. UTM Easting (KM): 586.774	12G. UTM Zone: 17 S

13. Briefly describe the proposed change(s) at the facility:
Not Applicable

14A. Provide the date of anticipated installation or change: 04/01/2017 – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: / /	14B. Date of anticipated Start-Up if a permit is granted: 05/01/2017

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

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day 10 Days Per Week 5.5 Weeks Per Year 52

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

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

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

Section II. Additional attachments and supporting documents.

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

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

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

– Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

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

23. Provide a **Process Description** as **Attachment G.**

– Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

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

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

– For chemical processes, provide a MSDS for each compound emitted to the air.

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

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

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

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

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

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 Gregory A. Reshenberg *(Please use blue ink)* DATE: 2/23/2017 *(Please use blue ink)*

35B. Printed name of signee: Greg Reshenberg		35C. Title: General Manager
35D. E-mail: gregr@stoneconcrete.com	36E. Phone: (724) 836-1400	36F. FAX:
36A. Printed name of contact person (if different from above): Brian Henckel		36B. Title: Risk Manager
36C. E-mail: safety@stoneconcrete.com	36D. Phone: (724) 836-1400	36E. FAX:

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
BUSINESS REGISTRATION CERTIFICATION

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
WENDELL H STONE COMPANY INC
DBA STONE AND COMPANY
606 MCCORMICK AVE
CONNELLSVILLE, PA 15425-2733

BUSINESS REGISTRATION ACCOUNT NUMBER: **1023-0983**

This certificate is issued on: **06/29/2011**

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

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

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

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

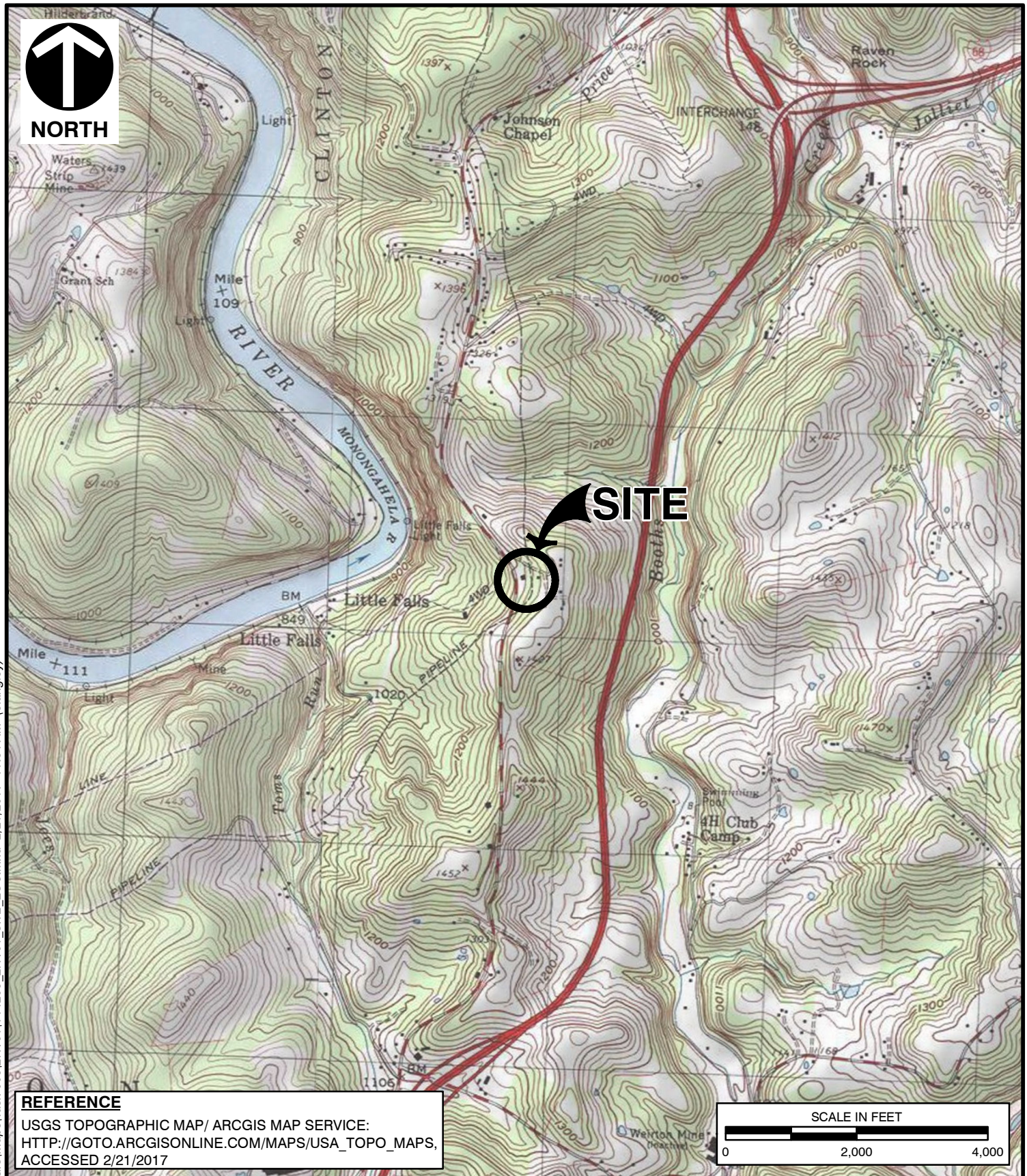
Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

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

atL006 v.4
L1406237824

ATTACHMENT B

MAPS



REFERENCE

USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS, ACCESSED 2/21/2017

Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205-9072
412-429-2324 • 800-365-2324
www.cecinc.com

WENDELL H. STONE COMPANY, INC.
DBA STONE & COMPANY, INC.
MORGANTOWN BATCH PLANT AIR PERMITTING
MONONGALIA COUNTY, WEST VIRGINIA

SITE LOCATION MAP

DRAWN BY:	CBL	CHECKED BY:	LZG	APPROVED BY:	* Hand signature on file BNB*	FIGURE NO:	1
DATE:	2/21/2017	SCALE:	1 " = 2,000 '	PROJECT NO:	144-205		

\\Svr-export\projects\2014\144-205\-GIS\Maps\Task 005\ENV01\144205_ENV01_SITE_LOC.mxd 2/21/2017 11:34 AM (clangley)

ATTACHMENT C

SCHEDULE

Schedule

The construction of the batch concrete manufacturing plant at the Wendell H. Stone Company dba Stone & Company, Inc. Morgantown facility, will commence upon approval from the West Virginia Department of Environmental Protection Division of Air Quality.

Construction is expect to take approximately 3 months. Start-up of the facility will commence when installation is completed and all permitting requirements have been completed.

ATTACHMENT D
REGULATORY DISCUSSION

REGULATORY DISCUSSION

We have evaluated the applicable and non-applicable regulations pertaining to the proposed construction and operation of the new batch concrete manufacturing plant.

APPLICABLE REGULATIONS

The proposed Batch Concrete Manufacturing Plant is subject to the following applicable rules and regulations:

Federal and State:

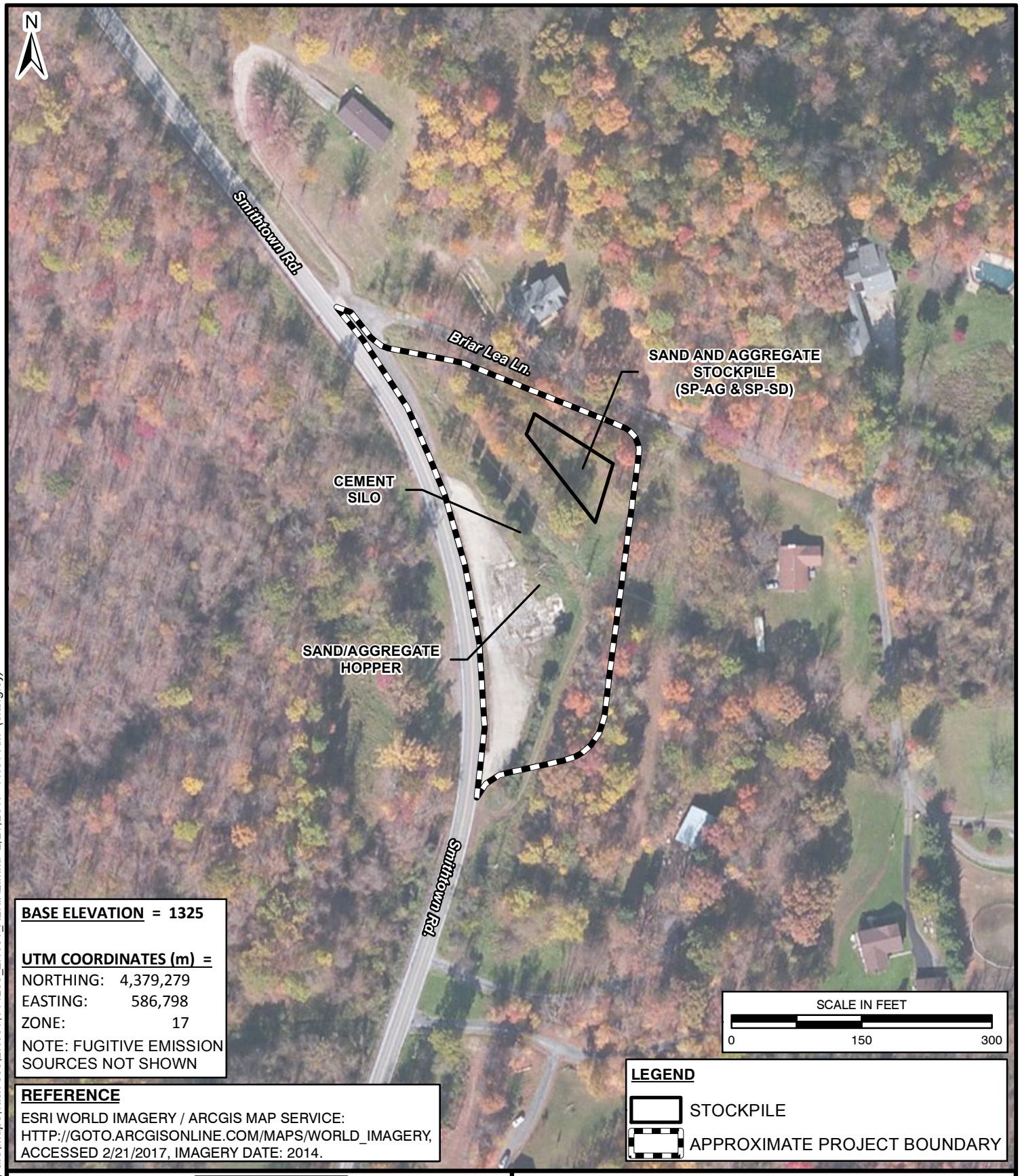
45 CSR 7 – *To Prevent and Control Air Pollution from Manufacturing Process Operations*

45 CSR 13 – *Permits for Construction, Modification, Relocation, and Operation of Stationary Source of Air Pollutants*

45 CSR 17 – *To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Particulate Matter*

ATTACHMENT E

PLOT PLAN



BASE ELEVATION = 1325

UTM COORDINATES (m) =

NORTHING: 4,379,279
EASTING: 586,798
ZONE: 17

NOTE: FUGITIVE EMISSION SOURCES NOT SHOWN

REFERENCE

ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY, ACCESSED 2/21/2017, IMAGERY DATE: 2014.

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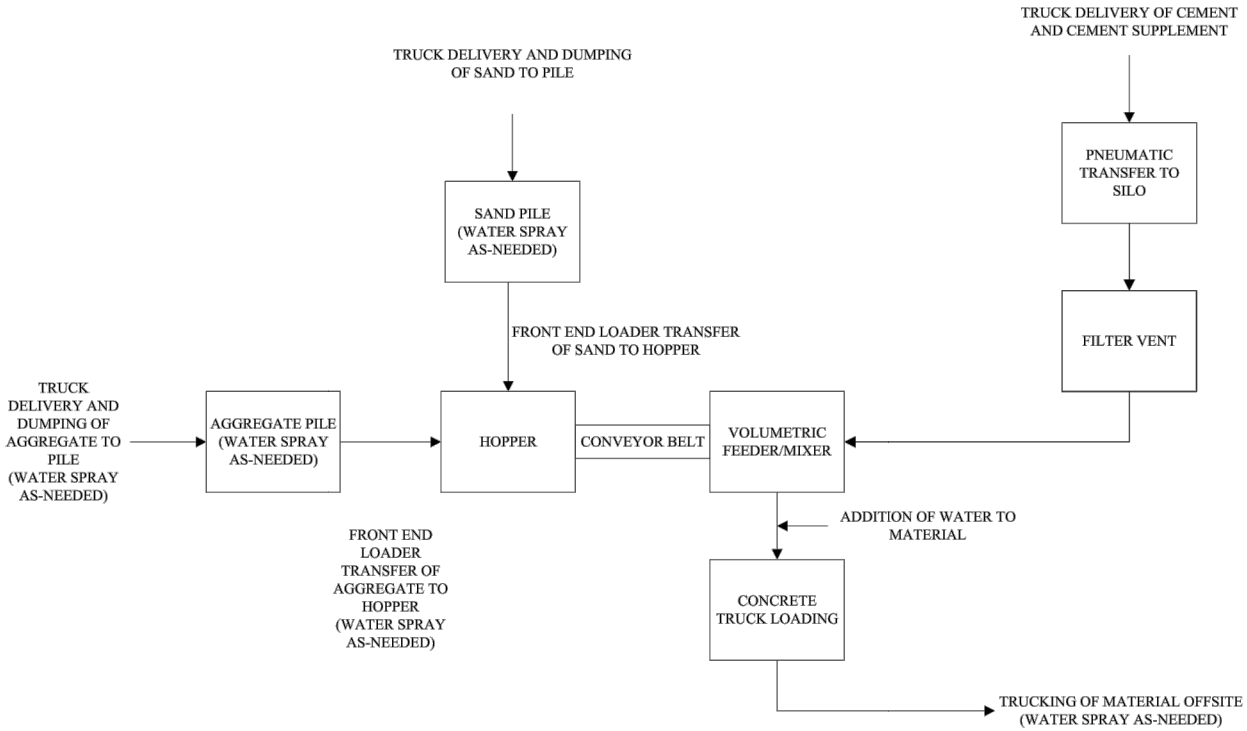
WENDELL H. STONE COMPANY, INC.
DBA STONE & COMPANY, INC.
MORGANTOWN BATCH PLANT AIR PERMITTING
MONONGALIA COUNTY, WEST VIRGINIA

AERIAL MAP

DRAWN BY:	CBL	CHECKED BY:	LZG	APPROVED BY:	* Hand signature on file BNB*	FIGURE NO:	2
DATE:	2/21/2017	SCALE:	1 " = 150 '	PROJECT NO:	144-205		

\\Svr-export\projects\2014\144-205\-GIS\Maps\Task 005\ENV01\144205_ENV01_AERIAL.mxd 2/21/2017 11:51 AM (clangley)

ATTACHMENT F
PROCESS FLOW DIAGRAM



*HAND SIGNATURE ON FILE

Civil & Environmental Consultants, Inc.
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www.cecinc.com

WENDELL H. STONE COMPANY, INC.
DBA STONE & COMPANY, INC.
MORGANTOWN BATCH PLANT AIR PERMITTING
MONONGALIA COUNTY, WEST VIRGINIA

PROCESS FLOW DIAGRAM

DRAWN BY:	DWD	CHECKED BY:	BNB	APPROVED BY:	KAM*	FIGURE NO.:	3
DATE:	2/21/2017	DWG SCALE:	NTS	PROJECT NO:	144-205		

ATTACHMENT G
PROCESS DESCRIPTION

PROCESS DESCRIPTION

Wendell H. Stone Company dba Stone & Company, Inc. (Stone) is planning to construct a concrete batch plant in Morgantown, West Virginia. Travel, working, and storage areas will be paved in concrete or asphalt. The facility will produce approximately 50,000 cubic yards of concrete per year (95,000 tons per year).

Sand and aggregate will be delivered to the site via dump trucks, and unloaded into designated stockpile areas (SP-AG and SP-SD). Cement and cement supplement will be delivered to the site via trucks and pneumatically unloaded into a storage silo. To minimize fugitive emissions, the aggregate stockpile and dump truck unloading areas will be sprayed with water on an as-needed basis. The silo will be equipped with a filter vent, which has a control efficiency of 99.9%, also minimizing emissions. The sand and aggregate will be transferred from the stockpiles to a hopper via a front-end loader. From the hopper, the sand and aggregate will be weighed and then conveyed to the volumetric feeder/mixer. The cement and cement supplement are weighed and then also transferred to an enclosed volumetric feeder/mixer. Water will be added to the material and the produced concrete will then loaded into trucks which exit the site via a paved route for offsite delivery. All areas at the site will be paved. The haul roads will be sprayed with water on an as-needed basis to minimize fugitive dust emissions.

Emission sources for the Morgantown Batch Plant include aggregate, sand, and cement transfer activities (MT-AG, MT-SD, and MT-CT), wind erosion from aggregate and sand stockpiles (SP-AG and SP-SD), transfer activities on the site's paved roads (HR-AG, HR-CT, CR-CON, and HR-END), and discharges from the baghouse (MT-CT-C).

There will be no stationary combustion sources. All power will be electric.

A 500-gallon diesel tank will also be located at the site for equipment refueling.

ATTACHMENT H
MATERIAL SAFETY DATA SHEETS

Material Safety Data Sheet

bp

35

1. Product and company identification

Product name	DIESEL FUEL NO. 2
MSDS #	11155
Code	11155
Product use	Fuel.
Synonyms	Ultra Low Sulfur No. 2 Amoco Premier Diesel Fuel, Ultra Low Sulfur No. 2 Amoco Premier Diesel Fuel – Winterized, Ultra Low Sulfur No. 2 BP Supreme Diesel, Low Sulfur No. 2 BP Diesel Fuel, Ultra Low Sulfur No. 2 BP Diesel Fuel, Ultra Low Sulfur No. 2 BP Diesel Fuel – Winterized
Supplier	**BP Products North America Inc.** **150 West Warrenville Road** **Naperville, Illinois 60563-8460** **USA**
EMERGENCY HEALTH INFORMATION:	**1 (800) 447-8735** **Outside the US: +1 703-527-3887 (CHEMTREC)**
EMERGENCY SPILL INFORMATION:	**1 (800) 424-9300 CHEMTREC (USA)**
OTHER PRODUCT INFORMATION	**1 (866) 4 BP - MSDS** **(866-427-6737 Toll Free - North America)** **email: bpcares@bp.com**

2. Hazards identification

Physical state	Liquid.
Color	Colorless. to Various Colors. (May be dyed Red., Light Green. ,Yellow.)
Emergency overview	WARNING ! COMBUSTIBLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED. ASPIRATION HAZARD. HARMFUL OR FATAL IF LIQUID IS ASPIRATED INTO LUNGS. MAY CAUSE RESPIRATORY TRACT IRRITATION. INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS, AND NAUSEA, AND MAY LEAD TO UNCONSCIOUSNESS. Combustible liquid. Harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. If ingested, do not induce vomiting. Avoid contact with eyes, skin and clothing. Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	Dermal contact. Eye contact. Inhalation. Ingestion.
Potential health effects	
Eyes	Slightly irritating to the eyes.
Skin	Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.
Inhalation	May cause respiratory tract irritation. Inhalation causes headaches, dizziness, drowsiness and nausea and may lead to unconsciousness. See toxicological information (section 11).

Ingestion	Harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage. See toxicological information (section 11).

See toxicological information (section 11)

3. Composition/information on ingredients

Ingredient name	CAS #	%
Petroleum distillates (Diesel Fuel No. 2)	68476-34-6	95 - 100
Contains one or more of the following biodiesels:	Varies	0 - 5
soybean oil, me ester	67784-80-9	.
Fatty acids, sunflower-oil, Me esters	68919-54-0	.
Fatty acids methyl esters	67762-38-3	.
Fatty acids, vegetable-oil, Methyl esters	68990-52-3	.
rape oil, me ester	73891-99-3	.
Fatty acids, canola-oil, Me esters	129828-16-6	.
fatty acids, tallow, me esters	61788-61-2	.
Contains:		
Naphthalene	91-20-3	1 - 3

May also contain small quantities of proprietary performance additives.

4. First aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation develops.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion	Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5. Fire-fighting measures

Flammability of the product	Combustible liquid.
Auto-ignition temperature	257°C (494°F)
Flash point	Closed cup: >38°C (>100.4°F) [Pensky-Martens.]
Explosion limits	Lower: 0.6% Upper: 7.5%
Fire/explosion hazards	Combustible liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
Unusual fire/explosion hazards	Explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Extinguishing media	
Suitable	In case of fire, use water fog, foam, dry chemicals, or carbon dioxide.
Not suitable	Do not use water jet.
Fire-fighting procedures	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Hazardous combustion products	Combustion products may include the following: carbon oxides (CO, CO_2) (carbon monoxide, carbon dioxide)
Protective clothing (fire)	

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

Special remarks on fire hazards Do not use water jet.

6. Accidental release measures

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

Personal protection in case of a large spill Chemical splash goggles. Chemical-resistant protective suit. Boots. Chemical-resistant gloves. Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product. Suggested protective clothing might not be adequate. Consult a specialist before handling this product. CAUTION: The protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not known, or if concentrations exceed the protection limits of air-purifying respirator.

Methods for cleaning up

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

Small spill Stop leak if without risk. Eliminate all ignition sources. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

Handling Do not ingest. Never siphon by mouth. If ingested, do not induce vomiting. Put on appropriate personal protective equipment (see section 8). Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.

Storage Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Occupational exposure limits
Petroleum distillates	**ACGIH TLV (United States). Absorbed through skin.** TWA: 100 mg/m³, (measured as total hydrocarbons) 8 hour(s). Issued/Revised: 1/2002 Form: Total hydrocarbons
Naphthalene	**ACGIH TLV (United States).** STEL: 79 mg/m³ 15 minute(s). Issued/Revised: 5/1996 STEL: 15 ppm 15 minute(s). Issued/Revised: 5/1996 TWA: 52 mg/m³ 8 hour(s). Issued/Revised: 5/1996 TWA: 10 ppm 8 hour(s). Issued/Revised: 5/1996 **OSHA PEL (United States).** TWA: 50 mg/m³ 8 hour(s). Issued/Revised: 6/1993

TWA: 10 ppm 8 hour(s). Issued/Revised: 6/1993

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Some states may enforce more stringent exposure limits.

Control Measures

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

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

Personal protection

Eyes

Avoid contact with eyes. Safety glasses with side shields.

Skin and body

Avoid contact with skin and clothing. Wear suitable protective clothing.

Respiratory

Use only with adequate ventilation. Do not breathe vapor or mist. If ventilation is inadequate, use a NIOSH-certified respirator with an organic vapor cartridge and P95 particulate filter.

CAUTION: The protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not known, or if concentrations exceed the protection limits of air-purifying respirator.

Hands

Wear gloves that cannot be penetrated by chemicals or oil.

The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Consult your supervisor or Standard Operating Procedure (S.O.P) for special handling instructions.

. Physical and chemical properties

Physical state	Liquid.
Color	Colorless. to Various Colors. (May be dyed Red., Light Green. ,Yellow.)
Odor	Petroleum
Flash point	Closed cup: >38°C (>100.4°F) [Pensky-Martens.]
Explosion limits	Lower: 0.6% Upper: 7.5%
Auto-ignition temperature	257°C (494°F)
Specific gravity	<1 [Water = 1]
Density	820 to 875 kg/m^3 (0.82 to 0.875 g/cm^3)
Viscosity	Kinematic: 1.7 to 4.1 mm^2/s (1.7 to 4.1 cSt) at 40°C
Solubility	negligible <0.1%

10. Stability and reactivity

Stability and reactivity	Stable under recommended storage and handling conditions (see section 7).
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Keep away from heat, sparks and flame. Avoid all possible sources of ignition (spark or flame).
Incompatibility with various substances	Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis. halogenated compounds.

Hazardous decomposition products	carbon oxides (CO, CO_2) (carbon monoxide, carbon dioxide)
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.

1. Toxicological information

Acute toxicity

Classification

Product/ingredient name	IARC	NTP	OSHA
Naphthalene	2B	Possible	-
fuel, diesel no. 2	3	-	-

IARC :
2B - Possible carcinogen to human.
3 - Not classifiable as a human carcinogen.

NTP :
Possible - Reasonably anticipated to be human carcinogens.

Other Toxicity Data

Aspiration of this product into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Do not siphon by mouth.

Middle distillate: From skin-painting studies of petroleum distillates of similar composition and distillate range, it has been shown that these types of materials often possess weak carcinogenic activity in laboratory animals. In these tests, the material is painted on the shaved backs of mice twice a week for their lifetime. The material is not washed off between applications. Therefore, there may be a potential risk of skin cancer from prolonged or repeated skin contact with this product in the absence of good personal hygiene. This particular product has not been tested for carcinogenic activity, but we have chosen to be cautious in light of the findings with other distillate streams.

Occasional skin contact with this product is not expected to have serious effects, but good personal hygiene should be practiced and repeated skin contact avoided. This product can also be expected to produce skin irritation upon prolonged or repeated skin contact. Personal hygiene measures taken to prevent skin irritation are expected to be adequate to prevent risk of skin cancer.

Diesel exhaust particulates have been classified by the National Toxicological Program (NTP) to be a reasonably anticipated human carcinogen. Exposure should be minimized to reduce potential risk.

Naphthalene has been reported to cause developmental toxicity in mice after oral exposure to relatively high dose levels, but developmental toxicity was not observed in NTP (National Toxicology Program) sponsored studies in rats and rabbits. Ingestion or inhalation of naphthalene can result in hemolysis and other blood abnormalities, and individuals (and infants) deficient in glucose-6-phosphate dehydrogenase may be especially susceptible to these effects. Inhalation of naphthalene may cause headache and nausea. Airborne exposure can result in eye irritation. Naphthalene exposure has been associated with cataracts in animals and humans.

Other information

Potential chronic health effects

Carcinogenicity Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

12. Ecological information

Ecotoxicity

No testing has been performed by the manufacturer.

Mobility Spillages may penetrate the soil causing ground water contamination.

Bioaccumulative potential This product is not expected to bioaccumulate through food chains in the environment.

Other ecological information	Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

13. Disposal considerations

Waste information

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

NOTE: The generator of waste has the responsibility for proper waste identification (based on characteristic(s) or listing), transportation and disposal

14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	Packing group	Additional information
DOT Classification	NA 1993	Diesel fuel	3	III	-
TDG Classification	UN 1202	Gas oil	3	III	-
IMDG Classification	UN 1202	Gas oil	3	III	**Remarks** Marine pollutant
IATA/ICAO Classification	UN 1202	Gas oil	3	III	**Remarks** Environmentally hazardous substance mark.

15. Regulatory information

U.S. Federal Regulations

United States Inventory (TSCA 8b)

All components are listed or exempted.

TSCA 12(b) one-time export: Naphthalene

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Naphthalene
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: DIESEL FUEL NO. 2: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Naphthalene	91-20-3	1.0035 - 3.0111
Supplier notification	Naphthalene	91-20-3	1.0035 - 3.0111

CERCLA Sections 102a/103 Hazardous Substances (40 CFR Part 302.4): CERCLA: Hazardous substances.: o-Xylene: 1000 lbs. (454 kg); Naphthalene: 100 lbs. (45.4 kg); benzo[def]chrysene: 1 lb. (0.454 kg); Ethylbenzene: 1000 lbs. (454 kg); xylene: 100 lbs. (45.4 kg); Cumene: 5000 lbs. (2270 kg); Phenol: 1000 lbs. (454 kg); Benzene: 10 lbs. (4.54 kg); Alkylaryl sulfonic acid: 1000 lbs. (454 kg); Toluene: 1000 lbs. (454 kg); Methanol: 5000 lbs. (2270 kg); 2-Butoxyethanol;

State regulations

Massachusetts Substances	The following components are listed: NAPHTHALENE
New Jersey Hazardous Substances	The following components are listed: DIESEL FUEL; # 2 HEATING OIL; NAPHTHALENE; MOTH FLAKES
Pennsylvania RTK Hazardous Substances	The following components are listed: NAPHTHALENE
California Prop. 65	**WARNING:** This product contains a chemical known to the State of California to cause cancer. Naphthalene; Ethylbenzene; benzo[def]chrysene **WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Toluene **WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. Benzene Prop 65 chemicals will result under certain conditions from the use of this material. For example, burning fuels produces combustion products including diesel exhaust, a Prop 65 carcinogen, and carbon monoxide, a Prop 65 reproductive toxin.

Inventories

Canada Inventory	Not determined.
Europe Inventory	At least one component is not listed.
Australia Inventory (AICS)	At least one component is not listed.
China Inventory (IECSC)	Not determined.
Japan Inventory (ENCS)	At least one component is not listed.
Korea Inventory (KECI)	At least one component is not listed.
Philippines Inventory (PICCS)	At least one component is not listed.

16. Other information

Label requirements

WARNING !

COMBUSTIBLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.
HARMFUL IF SWALLOWED.
ASPIRATION HAZARD.
HARMFUL OR FATAL IF LIQUID IS ASPIRATED INTO LUNGS.
MAY CAUSE RESPIRATORY TRACT IRRITATION.
INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS, AND NAUSEA, AND MAY LEAD TO UNCONSCIOUSNESS.

HMIS® Rating :

Health *	**1**
Flammability	**2**
Physical Hazard	**0**
Personal protection	**X**

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

History

Date of issue	07/20/2010.
Date of previous issue	07/20/2010.
Prepared by	Product Stewardship

Notice to reader

1. Product and company identification

Product name	Sika® AIR 360
Supplier	Sika Corporation Polito Avenue 201 Lyndhurst, NJ 07071
Telephone	(201) 933-8800
Telefax	(201) 804-1076
Emergency telephone	CHEMTREC: 800-424-9300
e-mail address of person responsible for this SDS	INTERNATIONAL: 703-527-3887 ehs@sika-corp.com
Manufacturer	Sika Corporation, Operations 201 Polito Avenue Lyndhurst, NJ 07071 www.sikausa.com
Telephone	(201) 933 - 8800
Chemical family	Aqueous solution

2. Hazards identification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Potential Health Effects

Inhalation	May cause respiratory tract irritation.
Skin	May cause skin irritation.
Eyes	Causes eye irritation.
Ingestion	May cause gastrointestinal disturbance.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Component	CAS Number
Sulfonic-acids,-C14-16-alkane-hydroxy-and-C14-16-alkene, -sodium-salts	68439-57-6

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

4. First aid measures

First aid procedures

Inhalation	If inhaled, remove to fresh air.

	If breathing is difficult, trained personnel should give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately if irritation develops and persists.
Eye contact	If easy to do, remove contact lens, if worn. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion	If swallowed, contact a poison control center or physician immediately. Do NOT induce vomiting unless directed to do so by medical personnel Never give anything by mouth to an unconscious person.

Notes to physician

Treatment	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Fire fighting

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	none
Further information	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk without suitable training.

Protective equipment and precautions for firefighters

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

6. Accidental release measures

Personal precautions	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. No action shall be taken involving any personal risk without suitable training. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

	Material can create slippery conditions.
Environmental precautions	Local authorities should be advised if significant spillages cannot be contained. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for containment and cleaning up	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Large spills should be collected mechanically (remove by pumping) for disposal.

7. Handling and storage

Handling	For personal protection see section 8. Avoid inhalation, ingestion and contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. To maintain product quality, do not store in heat or direct sunlight. Store in accordance with local regulations.

8. Exposure controls/personal protection

Exposure limit(s)

Contains no substances with occupational exposure limit values.

* **Basis**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

Engineering measures	Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Eye protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Skin and body protection	Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas.

9. Physical and chemical properties

Appearance

Physical state	liquid
Color	yellow

Safety data

pH	8
Density	ca.1.01 g/cm3 at 68 °F (20 °C)
Viscosity, kinematic	> 7 mm2/s at 104 °F (40 °C)

10. Stability and reactivity

Stability	Stable under normal conditions.
Conditions to avoid	not applicable
Materials to avoid	not applicable
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Carcinogenicity

not applicable

IARC	not applicable
OSHA	not applicable
NTP	not applicable
ACGIH	not applicable

12. Ecological information

Other information	Do not empty into drains; dispose of this material and its container in a safe way. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

13. Disposal considerations

Waste disposal methods	Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
Not dangerous goods
IATA
Not dangerous goods
IMDG
Not dangerous goods

15. Regulatory information

Federal Regulations

TSCA Status	On TSCA Inventory
SARA 311/312 Hazards	Acute Health Hazard

EPCRA - Emergency Planning Community Right - To - Know

SARA 302 Ingredients	not applicable
SARA 313 Ingredients	not applicable

Clean Air Act

Ozone-Depletion Potential	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

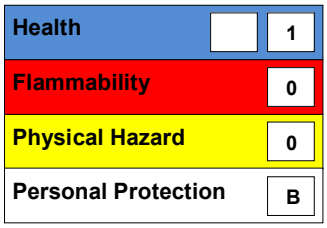
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

State Regulations

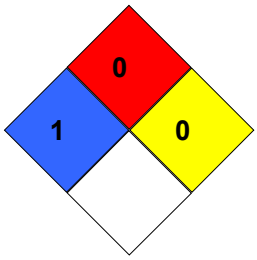
California Prop. 65 Ingredients	This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

16. Other information

HMIS Classification



NFPA Classification



Caution: HMIS® ratings and NFPA ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® and NFPA ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® and NFPA ratings are to be used with a fully implemented HMIS® and NFPA program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). NFPA or the National Fire Protection Association is a private non-profit organization and an authoritative source of technical background, data, and consumer advice on fire protection, problems and prevention. Please note HMIS® attempts to convey full health warning information to all employees while NFPA is meant primarily for fire fighters and other emergency responders.

Notes to Reader

The information contained in this Material Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Technical Data Sheet, product label and Material Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this MSDS.

SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

1. Product and company identification

Product name	Plastocrete® 10N
Supplier	Sika Corporation 201 Polito Avenue Lyndhurst, NJ 07071
Telephone	(201) 933-8800
Telefax	(201) 804-1076
Emergency telephone	CHEMTREC: 800-424-9300
e-mail address of person responsible for this SDS	INTERNATIONAL: 703-527-3887 ehs@sika-corp.com
Manufacturer	Sika Corporation, Operations 201 Polito Avenue Lyndhurst, NJ 07071 www.sikausa.com
Telephone	(201) 933 - 8800
Chemical family	Aqueous solution

2. Hazards identification

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Potential Health Effects

Inhalation	May cause respiratory tract irritation.
Skin	May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May cause gastrointestinal disturbance.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Component	CAS Number
Glycerol	56-81-5

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

4. First aid measures

First aid procedures

Inhalation	If inhaled, remove to fresh air. If breathing is difficult, trained personnel should give oxygen. If not breathing, give artificial respiration.

	Get medical attention.
Skin contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention immediately if irritation develops and persists.
Eye contact	If easy to do, remove contact lens, if worn. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion	If swallowed, contact a poison control center or physician immediately. Do NOT induce vomiting unless directed to do so by medical personnel Never give anything by mouth to an unconscious person.

Notes to physician

Treatment	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Fire fighting

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	none
Further information	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk without suitable training.

Protective equipment and precautions for firefighters

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

6. Accidental release measures

Personal precautions	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. No action shall be taken involving any personal risk without suitable training. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Material can create slippery conditions.
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil,

waterways, drains and sewers.

Methods for containment and cleaning up	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Large spills should be collected mechanically (remove by pumping) for disposal.

7. Handling and storage

Handling	For personal protection see section 8. Avoid inhalation, ingestion and contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. To maintain product quality, do not store in heat or direct sunlight. Store in accordance with local regulations.

8. Exposure controls/personal protection

Exposure limit(s)

Component	CAS Number	Content %	Basis *	Value	Exposure limit(s) / Form of exposure
Glycerol	56-81-5	5 - 10	OSHA P0	TWA	10 mg/m3 Total
		5 - 10	OSHA P0	TWA	5 mg/m3 Respirable fraction
		5 - 10	ACGIH	TWA	10 mg/m3
		5 - 10	OSHA P1	TWA	15 mg/m3 total dust
		5 - 10	OSHA P1	TWA	5 mg/m3 respirable fraction

* **Basis**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

Engineering measures	Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Eye protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Skin and body protection	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas.

9. Physical and chemical properties

Appearance

Physical state	liquid
Color	dark brown

Safety data

pH	7
Density	1.205 g/cm3

10. Stability and reactivity

Stability	No dangerous reaction known under conditions of normal use. Stable under normal conditions.
Conditions to avoid	not applicable
Materials to avoid	not applicable
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Carcinogenicity

not applicable

IARC	not applicable
OSHA	not applicable
NTP	not applicable
ACGIH	not applicable

12. Ecological information

Other information	Do not empty into drains; dispose of this material and its container in a safe way. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

13. Disposal considerations

Waste disposal methods	Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
Not dangerous goods
IATA
Not dangerous goods
IMDG
Not dangerous goods

15. Regulatory information

Federal Regulations

TSCA Status	On TSCA Inventory
SARA 311/312 Hazards	Acute Health Hazard

EPCRA - Emergency Planning Community Right - To - Know

SARA 302 Ingredients	not applicable
SARA 313 Ingredients	not applicable

Clean Air Act

Ozone-Depletion Potential	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

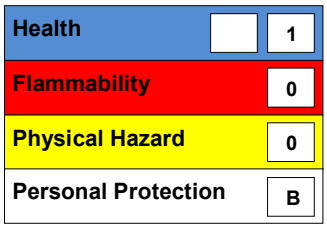
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

State Regulations

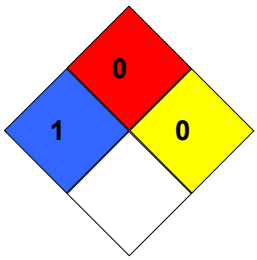
California Prop. 65 Ingredients	This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

16. Other information

HMIS Classification



NFPA Classification



Caution: HMIS® ratings and NFPA ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® and NFPA ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® and NFPA ratings are to be used with a fully implemented HMIS® and NFPA program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). NFPA or the National Fire Protection Association is a private non-profit organization and an authoritative source of technical background, data, and consumer advice on fire protection, problems and prevention. Please note HMIS® attempts to convey full health warning information to all employees while NFPA is meant primarily for fire fighters and other emergency responders.

Notes to Reader

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SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

1. Product and company identification

Product name	SikaPlast®-200
Supplier	Sika Corporation Polito Avenue 201 Lyndhurst, NJ 07071
Telephone	(201) 933-8800
Telefax	(201) 804-1076
Emergency telephone	CHEMTREC: 800-424-9300
e-mail address of person responsible for this SDS	INTERNATIONAL: 703-527-3887 ehs@sika-corp.com
Manufacturer	Sika Corporation, Operations 201 Polito Avenue Lyndhurst, NJ 07071 www.sikausa.com
Telephone	(201) 933 - 8800
Chemical family	Aqueous solution

2. Hazards identification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Potential Health Effects

Inhalation	May cause respiratory tract irritation.
Skin	Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.
Warning	Contains material that may cause target organ damage. Possible cancer hazard. Contains material which may cause cancer based on animal data.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Component	CAS Number
sodium nitrate	7631-99-4
Triethanolamine	102-71-6
2,2-iminodiethanol	111-42-2

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

4. First aid measures

First aid procedures

Inhalation	If inhaled, remove to fresh air. If breathing is difficult, trained personnel should give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention immediately if irritation develops and persists.
Eye contact	If easy to do, remove contact lens, if worn. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion	If swallowed, contact a poison control center or physician immediately. Do NOT induce vomiting unless directed to do so by medical personnel Never give anything by mouth to an unconscious person. Get medical attention immediately.

Notes to physician

Treatment	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Fire fighting

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	none
Further information	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk without suitable training.

Protective equipment and precautions for firefighters

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

6. Accidental release measures

Personal precautions	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. No action shall be taken involving any personal risk without suitable training. Keep people away from and upwind of spill/leak. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Material can create slippery conditions.
Environmental precautions	Local authorities should be advised if significant spillages cannot be contained. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for containment and cleaning up	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Large spills should be collected mechanically (remove by pumping) for disposal. Flush spill area with water spray. Do not flush to sewer. Dispose in corrosive resistant polyethylene container with a resistant inliner.

7. Handling and storage

Handling	For personal protection see section 8. Avoid inhalation, ingestion and contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. To maintain product quality, do not store in heat or direct sunlight. Store in accordance with local regulations. Separate from reducing agents and combustible materials. Storage away from incompatible materials (see section 10).

8. Exposure controls/personal protection

Exposure limit(s)

Component	CAS Number	Content %	Basis *	Value	Exposure limit(s) / Form of exposure
Triethanolamine	102-71-6	1 - 5	ACGIH	TWA	5 mg/m3
2,2-iminodiethanol	111-42-2	0.1 - 1	ACGIH	TWA	1 mg/m3 Inhalable fraction and vapor
		0.1 - 1	OSHA P0	TWA	3 ppm 15 mg/m3

* **Basis**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

Engineering measures	Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Eye protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Skin and body protection	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Hygiene measures	Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Remove respiratory and skin/eye protection only after vapors have been cleared from the area. Remove contaminated clothing and protective equipment before entering eating areas. Wash thoroughly after handling.

9. Physical and chemical properties

Appearance

Physical state	liquid
Color	dark
Odor	odorless mild

Safety data

pH	12

Density	1.3 g/cm3

10. Stability and reactivity

Stability	Stable under normal conditions.
Conditions to avoid	not applicable
Materials to avoid	not applicable
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Thermal decomposition	Decomposes on heating.
Other information	: Avoid exposure to extreme temperatures. Avoid contact with combustible materials, reducing agents and strong acids.

11. Toxicological information

Acute oral toxicity	Component: sodium nitrate LD50 Oral rat Dose: 3,430 mg/kg
Target Organs	Blood Nervous system Clinical signs associated with nitrate poisoning include: Gastroenteritis, abdominal pain, nausea, vomiting, diarrhea, acidosis, muscular weakness, dizziness, fatigue, headache, incoordination, convulsions, accelerated heart rate, dyspnea, and in severe cases, methemoglobinemia due to inadequate oxygenation of the blood.

Carcinogenicity

IARC	Group 2A: Probably carcinogenic to humans sodium nitrate 7631-99-4
OSHA	not applicable
NTP	not applicable
ACGIH	Confirmed animal carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure. 2,2-iminodiethanol 111-42-2

12. Ecological information

Other information	Do not empty into drains; dispose of this material and its container in a safe way.

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

13. Disposal considerations

Waste disposal methods	Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
Not dangerous goods
IATA
Not dangerous goods
IMDG
Not dangerous goods

15. Regulatory information

Federal Regulations

TSCA Status	On TSCA Inventory
SARA 311/312 Hazards	Acute Health Hazard Chronic Health Hazard

EPCRA - Emergency Planning Community Right - To - Know

SARA 302 Ingredients	not applicable
SARA 313 Ingredients	not applicable

Clean Air Act

Ozone-Depletion Potential	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

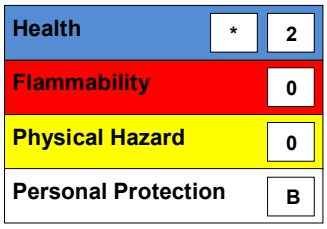
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

State Regulations

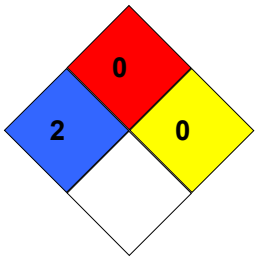
California Prop. 65 Ingredients	This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

16. Other information

HMIS Classification



NFPA Classification



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Notes to Reader

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Material Safety Data Sheet

Plastocrete 161 HE

1 . Product and company identification

Product name : Plastocrete 161 HE

Supplier : Sika Corporation, Operations
201 Polito Avenue
Lyndhurst, NJ 07071
www.sikacorp.com

Telephone no. : (201) 933 - 8800

Fax no. : (201) 804 - 1076

In case of emergency : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Manufacturer : Sika Corporation, Operations
201 Polito Avenue
Lyndhurst, NJ 07071

Telephone no. : (201) 933-8800

Validation date : **8. May 2008.**

Print date : 8. May 2008.

Product type : Liquid.

2 . Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation : Irritating to respiratory system.

Ingestion : Harmful if swallowed.

Skin : Irritating to skin.

Eyes : Irritating to eyes.

Potential chronic health effects

Chronic effects : Irritating to eyes. Irritating to respiratory system. Irritating to skin.

See toxicological information (section 11)

3 . Composition/information on ingredients

Name	CAS number	%
calcium chloride	10043-52-4	10 - 30

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

4 . First aid measures

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

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

Not suitable : None known.

5 . Fire-fighting measures

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

Hazardous combustion products : Decomposition products may include the following materials:
halogenated compounds
metal oxide/oxides

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

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

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

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

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

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Expose controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

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

9 . Physical and chemical properties

Color : Brown.

Odor : Aromatic.

10 . Stability and reactivity

Stability : The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Acute toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

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

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Additional information
DOT Classification	Not regulated.		-	-	-
TDG Classification	Not regulated.		-	-	-
ADR/RID Class	Not regulated.		-	-	-
IMDG Class	Not regulated.		-	-	-
IATA-DGR Class	Not regulated.		-	-	-

PG* : Packing group

15 . Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: calcium chloride; potassium chloride
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: calcium chloride: Immediate (acute) health hazard, Delayed (chronic) health hazard; potassium chloride: Immediate (acute) health hazard, Delayed (chronic) health hazard

State regulations :
Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: None of the components are listed.
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: None of the components are listed.
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: None of the components are listed.
New York Toxic Chemical Release Reporting: None of the components are listed.

15 . Regulatory information

Pennsylvania RTK Hazardous Substances: None of the components are listed.
Rhode Island Hazardous Substances: None of the components are listed.

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

16 . Other information

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

Health	*	2
Flammability		0
Physical hazards		0
Personal Protection Equipment		D

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The customer is responsible for determining the PPE code for this material.

Date of printing : **08.05.2008.**

Date of issue : **08.05.2008.**

Date of previous issue : **21.04.2008.**

Version : **1.01**

Indicates information that has changed from previously issued version.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikacorp.com or 201-933-8800.

1. Product and company identification

Product name	SikaSet® R.H.E.
Supplier	Sika Corporation Polito Avenue 201 Lyndhurst, NJ 07071
Telephone	(201) 933-8800
Telefax	(201) 804-1076
Emergency telephone	CHEMTREC: 800-424-9300
e-mail address of person responsible for this SDS	INTERNATIONAL: 703-527-3887 ehs@sika-corp.com
Manufacturer	Sika Corporation, Operations 201 Polito Avenue Lyndhurst, NJ 07071 www.sikausa.com
Telephone	(201) 933 - 8800
Chemical family	Aqueous solution

2. Hazards identification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Potential Health Effects

Inhalation	May cause respiratory tract irritation.
Skin	May cause allergic skin reaction.
Eyes	May cause eye irritation.
Ingestion	May cause gastrointestinal disturbance.
Warning	Possible cancer hazard. Contains material which may cause cancer based on animal data.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Component	CAS Number
Calcium Nitrate Tetrahydrate	13477-34-4
Salts of thiocyanic acid	540-72-7
Methenamine	100-97-0

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

4. First aid measures

First aid procedures

Inhalation	If inhaled, remove to fresh air. If breathing is difficult, trained personnel should give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention immediately if symptoms occur.
Eye contact	If easy to do, remove contact lens, if worn. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion	If swallowed, contact a poison control center or physician immediately. Do NOT induce vomiting unless directed to do so by medical personnel Never give anything by mouth to an unconscious person.

Notes to physician

Treatment	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Fire fighting

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	none
Further information	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk without suitable training.

Protective equipment and precautions for firefighters

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

6. Accidental release measures

Personal precautions	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. No action shall be taken involving any personal risk without suitable training. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Material can create slippery conditions.
Environmental precautions	Local authorities should be advised if significant spillages cannot be contained. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for containment and cleaning up	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Large spills should be collected mechanically (remove by pumping) for disposal.

7. Handling and storage

Handling	For personal protection see section 8. Avoid inhalation, ingestion and contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. To maintain product quality, do not store in heat or direct sunlight. Store in accordance with local regulations.

8. Exposure controls/personal protection

Exposure limit(s)

Contains no substances with occupational exposure limit values.

* **Basis**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

Engineering measures	Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Eye protection	Safety eyewear complying with an approved standard should be

	used when a risk assessment indicates this is necessary.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Skin and body protection	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Hygiene measures	Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. Wash thoroughly after handling.

9. Physical and chemical properties

Appearance

Physical state	liquid
Color	dark brown

Safety data

pH	7.5
Density	1.4 g/cm3

10. Stability and reactivity

Stability	Stable under normal conditions.
Conditions to avoid	not applicable
Materials to avoid	not applicable
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Chronic Exposure	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity

IARC	Group 2A: Probably carcinogenic to humans Calcium Nitrate Tetrahydrate 13477-34-4
OSHA	not applicable
NTP	not applicable
ACGIH	not applicable

12. Ecological information

Other information	Do not empty into drains; dispose of this material and its container in a safe way. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

13. Disposal considerations

Waste disposal methods	Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
Not dangerous goods
IATA
Not dangerous goods
IMDG
Not dangerous goods

15. Regulatory information

Federal Regulations

TSCA Status	On TSCA Inventory
SARA 311/312 Hazards	Acute Health Hazard Chronic Health Hazard

EPCRA - Emergency Planning Community Right - To - Know

SARA 302 Ingredients	not applicable
SARA 313 Ingredients	not applicable

Clean Air Act

Ozone-Depletion Potential	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

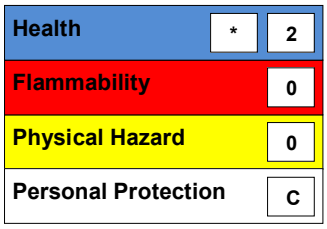
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

State Regulations

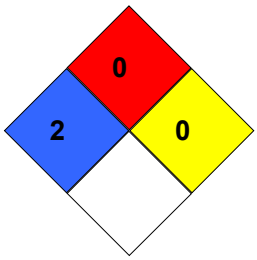
California Prop. 65 Ingredients	This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

16. Other information

HMIS Classification



NFPA Classification



Caution: HMIS® ratings and NFPA ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® and NFPA ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® and NFPA ratings are to be used with a fully implemented HMIS® and NFPA program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). NFPA or the National Fire Protection Association is a private non-profit organization and an authoritative source of technical background, data, and consumer advice on fire protection, problems and prevention. Please note HMIS® attempts to convey full health warning information to all employees while NFPA is meant primarily for fire fighters and other emergency responders.

Notes to Reader

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FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

1. Product and company identification

Product name	Sikament® SPMN
Supplier	Sika Corporation Polito Avenue 201 Lyndhurst, NJ 07071
Telephone	(201) 933-8800
Telefax	(201) 804-1076
Emergency telephone	CHEMTREC: 800-424-9300
e-mail address of person responsible for this SDS	INTERNATIONAL: 703-527-3887 ehs@sika-corp.com
Manufacturer	Sika Corporation, Operations 201 Polito Avenue Lyndhurst, NJ 07071 www.sikausa.com
Telephone	(201) 933 - 8800
Chemical family	Aqueous solution

2. Hazards identification

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Potential Health Effects

Inhalation	May cause respiratory tract irritation.
Skin	May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May cause gastrointestinal disturbance.
Warning	Possible cancer hazard. Contains material which may cause cancer based on animal data.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Component	CAS Number
Triethanolamine	102-71-6
2,2-iminodiethanol	111-42-2

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

4. First aid measures

First aid procedures

Inhalation	If inhaled, remove to fresh air. If breathing is difficult, trained personnel should give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention immediately if irritation develops and persists.
Eye contact	If easy to do, remove contact lens, if worn. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion	If swallowed, contact a poison control center or physician immediately. Do NOT induce vomiting unless directed to do so by medical personnel Never give anything by mouth to an unconscious person.

Notes to physician

Treatment	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Fire fighting

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	none
Further information	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk without suitable training.

Protective equipment and precautions for firefighters

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

6. Accidental release measures

Personal precautions	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. No action shall be taken involving any personal risk without suitable training. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

	Material can create slippery conditions.
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for containment and cleaning up	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Large spills should be collected mechanically (remove by pumping) for disposal.

7. Handling and storage

Handling	For personal protection see section 8. Avoid inhalation, ingestion and contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. To maintain product quality, do not store in heat or direct sunlight. Store in accordance with local regulations.

8. Exposure controls/personal protection

Exposure limit(s)

Component	CAS Number	Content %	Basis *	Value	Exposure limit(s) / Form of exposure
Triethanolamine	102-71-6	1 - 5	ACGIH	TWA	5 mg/m3
2,2-iminodiethanol	111-42-2	0.1 - 1	ACGIH	TWA	1 mg/m3 Inhalable fraction and vapor
		0.1 - 1	OSHA P0	TWA	3 ppm 15 mg/m3

* **Basis**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

Engineering measures	Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Eye protection	Safety eyewear complying with an approved standard should be

	used when a risk assessment indicates this is necessary.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Skin and body protection	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas.

9. Physical and chemical properties

Appearance

Physical state	liquid
Color	dark brown

Safety data

pH	10.1
Density	1.2 g/cm3

10. Stability and reactivity

Stability	Stable under normal conditions.
	No dangerous reaction known under conditions of normal use.
Conditions to avoid	not applicable
Materials to avoid	not applicable
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Carcinogenicity

IARC	not applicable
OSHA	not applicable
NTP	not applicable
ACGIH	Confirmed animal carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure. 2,2-iminodiethanol 111-42-2

12. Ecological information

Other information	Do not empty into drains; dispose of this material and its container in a safe way. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

13. Disposal considerations

Waste disposal methods	Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
Not dangerous goods
IATA
Not dangerous goods
IMDG
Not dangerous goods

15. Regulatory information

Federal Regulations

TSCA Status	On TSCA Inventory
SARA 311/312 Hazards	Acute Health Hazard

EPCRA - Emergency Planning Community Right - To - Know

SARA 302 Ingredients	not applicable
SARA 313 Ingredients	not applicable

Clean Air Act

Ozone-Depletion Potential	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

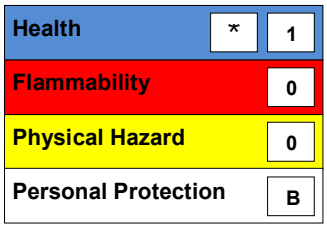
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

State Regulations

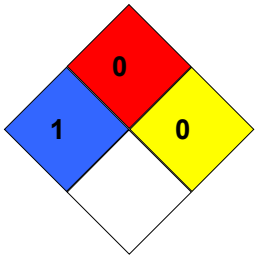
California Prop. 65 Ingredients	WARNING! This product contains a chemical known in the State of California to cause cancer.

16. Other information

HMIS Classification



NFPA Classification



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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Material Safety Data Sheet

Plastiment

1 . Product and company identification

Product name : Plastiment

Supplier : Sika Corporation, Construction
201 Polito Avenue
Lyndhurst, NJ 07071
www.sikaconstruction.com

Telephone no. : (201) 933 - 8800

Fax no. : (201) 804 - 1076

In case of emergency : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Manufacturer : Sika Corporation, Operations
201 Polito Avenue
Lyndhurst, NJ 07071
www.sikacorp.com

Telephone no. : (201) 933 - 8800

Validation date : **9. February 2010.**

Print date : 9. February 2010.

Product type : Liquid.

2 . Composition/information on ingredients

Name	CAS number	%
Sodium salt of organic acid mixture	Mixture	10 - 30

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

3 . Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation : Slightly irritating to the respiratory system.

Ingestion : No known significant effects or critical hazards.

Skin : Slightly irritating to the skin. May cause sensitization by skin contact.

Eyes : Irritating to eyes.

See toxicological information (section 11)

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Get medical attention. Immediately flush eyes with plenty of water for at least 15 minutes.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. Maintain an open airway.

4 . First aid measures

Ingestion : Wash out mouth with water. Move exposed person to fresh air. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

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

Not suitable : None known.

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

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

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

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

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

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

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

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in

7 . Handling and storage

use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

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

9 . Physical and chemical properties

Flash point : Closed cup: 104.4°C (219.9°F)

Color : Brown.

Odor : Pungent.

pH : 6.5

Density : ~1.185 g/cm^3

10 . Stability and reactivity

Stability : The product is stable.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Potential chronic health effects

Chronic effects : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Acute toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

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

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Additional information
DOT Classification	Not regulated.		-	-	-
TDG Classification	Not regulated.		-	-	-
ADR/RID Class	Not regulated.		-	-	-
IMDG Class	Not regulated.		-	-	-
IATA-DGR Class	Not regulated.		-	-	-

PG* : Packing group

15 . Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

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

16 . Other information

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

Health	2
Flammability	1
Physical hazards	0
Personal Protection Equipment	D

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The customer is responsible for determining the PPE code for this material.

Date of printing : **09.02.2010.**

Date of issue : **09.02.2010.**

Date of previous issue : **No previous validation.**

Version : **1.01**

Indicates information that has changed from previously issued version.

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Material Safety Data Sheet

SikaViscocrete 1000

1 . Product and company identification

Product name : SikaViscocrete 1000

Supplier : Sika Corporation, Construction
201 Polito Avenue
Lyndhurst, NJ 07071
www.sikaconstruction.com

Telephone no. : (201) 933 - 8800

Fax no. : (201) 804 - 1076

In case of emergency : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Manufacturer : Sika Corporation, Operations
201 Polito Avenue
Lyndhurst, NJ 07071
www.sikacorp.com

Telephone no. : (201) 933 - 8800

Validation date : **2. August 2010.**

Print date : 2. August 2010.

Product type : Liquid.

2 . Composition/information on ingredients

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

3 . Hazards identification

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

Potential acute health effects

Inhalation : May be harmful if inhaled.

Ingestion : May be harmful if swallowed.

Skin : May cause sensitization by skin contact.

Eyes : May cause eye irritation.

See toxicological information (section 11)

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Get medical attention if irritation occurs. Immediately flush eyes with plenty of water for at least 15 minutes.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. Maintain an open airway.

4 . First aid measures

Ingestion : Wash out mouth with water. Move exposed person to fresh air. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

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

Not suitable : None known.

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

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

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

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

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

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

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

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

7 . Handling and storage

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

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

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

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

9 . Physical and chemical properties

Flash point : Closed cup: Not applicable.

Color : Brown.

Odor : Characteristic.

pH : 3.5 to 5.5

Density : ~1.062 g/cm^3

10 . Stability and reactivity

Stability : The product is stable.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Potential chronic health effects

Chronic effects : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Acute toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

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

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Additional information
DOT Classification	Not regulated.		-	-	-
TDG Classification	Not regulated.		-	-	-
ADR/RID Class	Not regulated.		-	-	-
IMDG Class	Not regulated.		-	-	-
IATA-DGR Class	Not regulated.		-	-	-

PG* : Packing group

15 . Regulatory information

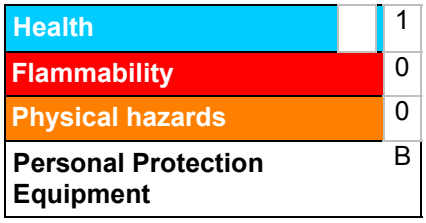
U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

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

16 . Other information

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



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Date of printing : **02.08.2010.**

Date of issue : **02.08.2010.**

Date of previous issue : **No previous validation.**

Version : **1**

Indicates information that has changed from previously issued version.

Notice to reader

The information contained in this Material Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Technical Data Sheet, product label and Material Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this MSDS.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikacorp.com or 201-933-8800.

Material Safety Data Sheet

SikaTard 440

1 . Product and company identification

Product name : SikaTard 440

Supplier : Sika Corporation, Construction
201 Polito Avenue
Lyndhurst, NJ 07071
www.sikaconstruction.com

Telephone no. : (201) 933 - 8800

Fax no. : (201) 804 - 1076

In case of emergency : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Manufacturer : Sika Corporation, Operations
201 Polito Avenue
Lyndhurst, NJ 07071
www.sikacorp.com

Telephone no. : (201) 933 - 8800

Validation date : **11. May 2010.**

Print date : 11. May 2010.

Product type : Liquid.

2 . Composition/information on ingredients

Name	CAS number	%
Sodium salt of an organic acid	Mixture	7 - 13

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

3 . Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation : May be irritating to the respiratory system.

Ingestion : May be harmful if swallowed.

Skin : May cause skin irritation.

Eyes : May cause eye irritation.

See toxicological information (section 11)

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Get medical attention. Chemical burns must be treated promptly by a physician. Immediately flush eyes with plenty of water for at least 15 minutes.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse.

Inhalation : Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. Maintain an open airway.

4 . First aid measures

Ingestion : Wash out mouth with water. Move exposed person to fresh air. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

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

Not suitable : None known.

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

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
phosphorus oxides
metal oxide/oxides

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

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

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

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

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

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

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

9 . Physical and chemical properties

Color : Green.

Odor : Odorless.

pH : 8.5

Density : ~1.152 g/cm^3

10 . Stability and reactivity

Stability : The product is stable.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Potential chronic health effects

Chronic effects : Contains material that may cause target organ damage, based on animal data.

Acute toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

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

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Additional information
DOT Classification	Not regulated.		-	-	-
TDG Classification	Not regulated.		-	-	-
ADR/RID Class	Not regulated.		-	-	-
IMDG Class	Not regulated.		-	-	-
IATA-DGR Class	Not regulated.		-	-	-

PG* : Packing group

15 . Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: sodium hydroxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: sodium hydroxide: Immediate (acute) health hazard

Clean Water Act (CWA) 311: sodium hydroxide; sodium metaphosphate

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

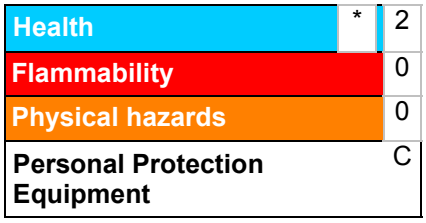
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

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

16 . Other information

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



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Date of printing : **11.05.2010.**

Date of issue : **11.05.2010.**

Date of previous issue : **05.04.2010.**

Version : **1.03**

Indicates information that has changed from previously issued version.

Notice to reader

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikacorp.com or 201-933-8800.

16 . Other information

Material Safety Data Sheet

Sika Stabilizer 4R

1 . Product and company identification

Product name : Sika Stabilizer 4R

Supplier : Sika Corporation, Operations
201 Polito Avenue
Lyndhurst, NJ 07071
www.sikacorp.com

Telephone no. : (201) 933 - 8800

Fax no. : (201) 804 - 1076

In case of emergency : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Manufacturer : Sika Coporation, Operations
201 Polito Avenue
Lyndhurst, NJ 07071
www.sikacorp.com

Telephone no. : (201) 903 - 8800

Validation date : **15. May 2008.**

Print date : 15. May 2008.

Product type : Liquid.

2 . Hazards identification

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

Potential acute health effects

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

See toxicological information (section 11)

3 . Composition/information on ingredients

Name	CAS number	%
propylene glycol	57-55-6	3 - 7

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

4 . First aid measures

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

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

Not suitable : None known.

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

Hazardous combustion products : Decomposition products may include the following materials:
carbon oxides

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

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

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

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

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

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Expose controls/personal protection

Product name	Exposure limits
propylene glycol	**AIHA WEEL (United States, 1/2007).** TWA: 10 mg/m³ 8 hour(s).

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

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

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

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

9 . Physical and chemical properties

Flash point : Closed cup: Not applicable.

Color : Blue.

Odor : Odorless.

pH : 9.4

Solubility : Easily soluble in the following materials: cold water.

10 . Stability and reactivity

Stability : The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Acute toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

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

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Additional information
DOT Classification	Not regulated.		-	-	-
TDG Classification	Not regulated.		-	-	-
ADR/RID Class	Not regulated.		-	-	-
IMDG Class	Not regulated.		-	-	-
IATA-DGR Class	Not regulated.		-	-	-

PG* : Packing group

15 . Regulatory information

U.S. Federal regulations : TSCA 8(a) PAIR: tributyl phosphate
United States inventory (TSCA 8b): At least one component is not listed.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: propylene glycol
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: propylene glycol: Immediate (acute) health hazard, Delayed (chronic) health hazard

State regulations : **Connecticut Carcinogen Reporting**: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: None of the components are listed.
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: None of the components are listed.

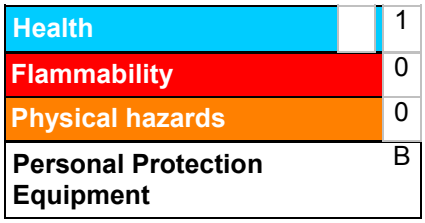
15 . Regulatory information

New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: None of the components are listed.
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: The following components are listed: 1,2-PROPANEDIOL
Rhode Island Hazardous Substances: None of the components are listed.

United States inventory (TSCA 8b) : **United States inventory (TSCA 8b):** At least one component is not listed.

16 . Other information

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



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Date of printing : **15.05.2008.**

Date of issue : **15.05.2008.**

Date of previous issue : **14.05.2008.**

Version : **1.01**

Indicates information that has changed from previously issued version.

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MATERIAL SAFETY DATA SHEET

Sikacrete 950-DP

HMIS

HEALTH	*1
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	E

1. Product And Company Identification

Supplier
Sika Corporation
201 Polito Ave
Lyndhurst, NJ 07071

Company Contact: EHS Department
Telephone Number: 201-933-8800
FAX Number: 201-933-9379
Web Site: www.sikausa.com

Manufacturer
Norchem
985 Seaway Drive, Suite A
Ft. Pierce, FL 34949

Telephone Number: 772-468-6100
FAX Number: 772-468-8702
Web Site: www.norchem.com

Supplier Emergency Contacts & Phone Number
CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Manufacturer Emergency Contacts & Phone Number
CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Issue Date: 06/01/2005

Product Name: Sikacrete 950-DP
CAS Number: 69012-64-2
Chemical Family: Microsilica
MSDS Number: 3585
Product Code: 0548-540

2. Composition/Information On Ingredients

Ingredient Name	CAS Number		Percent Of Total Weight
ALUMINUM OXIDE	1344-28-1	<	2
CALCIUM OXIDE	1305-78-8	<	2
CARBON	7440-44-0	<	8
FERRIC OXIDE	1309-37-1	<	2
MAGNESIUM OXIDE	1309-48-4	<	2
POTASSIUM HYDROXIDE	1309-48-4	<	2
SILICA, AMORPHOUS	69012-64-2	>	85
SILICA, QUARTZ	14808-60-7	<	0.05
SODIUM OXIDE	1310-73-2	<	2

Silica Fume from the production of silicon metal and ferro silicon metal produces trace amounts of crystalline silica. Manufacturer can provide a detailed elemental analysis including other trace elements. The (wt%) values will change if silica fume is from ferro silicon production.

3. Hazards Identification

Eye Hazards
May cause eye irritation.

Skin Hazards
Prolonged skin exposure may cause irritation, drying, or abrasions when wet.

Ingestion Hazards
May be harmful if swallowed.

Inhalation Hazards
Breathing dust may cause nose, throat or lung irritation. Respirable crystalline silica can cause silicosis, a fibrosis (scarring) of the lungs. Silicosis may be progressive.

4. First Aid Measures

Eye
In case of contact, hold eyelids apart and immediately flush eyes with plenty of tepid water for at least 15 minutes. Get medical attention immediately if irritation develops and persists.

Skin
In case of contact, immediately flush skin with soap and plenty of tepid water for at least 15 minutes. Get medical attention immediately if irritation (redness, rash, blistering) develops and persists. Wash clothing before reuse.

Ingestion
If swallowed, do not induce vomiting unless directed to do so by medical personnel.

Inhalation
If inhaled, remove to fresh air. If not breathing, give artificial respiration. Obtain medical attention if irritation develops and persists.

5. Fire Fighting Measures

Flash Point: N/A °F
Autoignition Point: N/AV °F
Flammability Class: NCMB
Lower Explosive Limit: N/AV
Upper Explosive Limit: N/AV

Fire And Explosion Hazards
None Known.

Extinguishing Media
Use the appropriate extinguishing media for the surrounding fire. Use water to cool fire-exposed containers.

Fire Fighting Instructions
In the event of a fire, firefighters should wear full protective clothing and NIOSH-approved self-contained breathing apparatus with a full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Avoid release to the environment. Using appropriate personal protective equipment (PPE), shovel material into waste containers taking care to minimize dust. Dampen if necessary to control dust. Vacuum clean dust with equipment fitted with High Efficiency Particulate Air (HEPA) filters.

7. Handling And Storage

Handling And Storage Precautions
Keep out of reach of children. Store in a cool, dry, well ventilated area. Keep containers tightly closed. Store away from Hydofluoric Acid and Fluorides, silica will become soluble. Avoid handling procedures that generate airborne

7. Handling And Storage - Continued

Handling And Storage Precautions - Continued

dust.

Work/Hygienic Practices

Use good personal hygiene. Wash thoroughly with soap and water after handling.

8. Exposure Controls/Personal Protection

Engineering Controls

Use of a system of local and/or general exhaust is recommended to keep employee below applicable exposure limits. Refer to the current edition of "Industrial Ventilation: A Manual of Recommended Practice" published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Eye/Face Protection

Safety glasses with side shields or goggles.

Skin Protection

Chemical-resistant gloves. Lab coat or other work clothing to prevent skin exposure (Long sleeve shirt and long pants). Launder before reuse.

Respiratory Protection

A respirator protection program that meets 29 CFR 1910.134 requirement must be followed whenever workplace conditions warrant a respirator's use. In areas where the Permissible Exposure Limits are exceeded, use a properly fitted NIOSH-approved respirator.

Ingredient(s) - Exposure Limits

SILICA, AMORPHOUS
- ACGIH TLV-TWA 10 mg/m3
- OSHA PEL-TWA 20 mppcf
- OSHA PEL-TWA 80 / %SiO2 mg/m3

SILICA, QUARTZ
- ACGIH TLV-TWA 0.05 mg/m3
- OSHA PEL-TWA 30/%SiO2+2 mg/m3
- OSHA PEL-TWA 10/%SiO2+2 mg/m3
- OSHA PEL-TWA 250/%SiO+5 mppcf

9. Physical And Chemical Properties

Appearance

Light to Dark Gray Powder

Odor

No Odor

Chemical Type: Mixture
Physical State: Solid
Melting Point: 2250 °F 1300 °C
Boiling Point: N/AV °F
Specific Gravity: 2.2 - 2.5
Percent Volatiles: N/AV
Packing Density: 4.68 lbs/gal
Vapor Pressure: N/AV
Vapor Density: N/AV
pH Factor: N/AP
Solubility: Insoluble in Water

10. Stability And Reactivity

Stability: Stable
Hazardous Polymerization: Will Not Occur

Conditions To Avoid (Stability)
Hydrofluoric Acid

Hazardous Decomposition Products
Heating silica fume at temperatures above 930F for prolonged time periods will convert amorphous silica to the crystalline phases Cristobalite and Tridymite that may cause silicosis. Increased temperatures will increase the formation rate of these phases.

11. Toxicological Information

Carcinogenicity Indicators
OSHA Carcinogen

Ingredient(s) - Carginogenicity
SILICA, AMORPHOUS
Listed In The IARC Monographs
SILICA, QUARTZ
NTP - Listed On The National Toxicology Program
Listed In The IARC Monographs

12. Ecological Information

No Data Available...

13. Disposal Considerations

Dispose in accordance with applicable federal, state and local government regulations. Waste generators must determine whether a discarded material is classified as a hazardous waste. USEPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. Transport Information

Proper Shipping Name
Not Regulated by the US D.O.T.

15. Regulatory Information

U.S. Regulatory Information
All ingredients of this product are listed or are excluded from listing under the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

SARA Hazard Classes
Acute Health Hazard
Chronic Health Hazard

SARA Section 313 Notification
This product does not contain any ingredients regulated under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 or 40 CFR 372.

Ingredient(s) - State Regulations
SILICA, AMORPHOUS
New Jersey - Workplace Hazard
Pennsylvania - Workplace Hazard

15. Regulatory Information - Continued

Ingredient(s) - State Regulations - Continued

Massachusetts - Hazardous Substance

SILICA, QUARTZ

New Jersey - Workplace Hazard
Pennsylvania - Workplace Hazard
California - Proposition 65
Massachusetts - Hazardous Substance

16. Other Information

HMIS Rating
Health: *1
Fire: 0
Reactivity: 0
PPE: E

Revision/Preparer Information
This MSDS Supercedes A Previous MSDS Dated: 07/06/2001

Disclaimer

The data in this Material Safety Data Sheet relates only to the specific material herein and does not relate to use in combination with any other materialor in any process. The information set forth herein is based on technical da ta that Sika believes to be reliable as of the date hereof. Since conditions of use are outside our control, we make no warranties, express or implied andassume no liability in connection with any use of this information. Nothing herein is to be taken as a license to operate under or a recommendation to i nfringe any patents.

SIKA CORPORATION

ATTACHMENT I
EMISSIONS UNIT TABLES

Attachment I

Emission Units Table

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

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
MT-AG	MT-AG	Transfer of Aggregate	2017	46,500 TPY	NA	MT-AG-Control
MT-SD	MT-SD	Transfer of Sand	2017	31,000 TPY	NA	MT-SD-Control
MT-CT	MT-CT	Transfer of Cement	2017	10,125 TPY	NA	MT-CT-Control
SP-AG	SP-AG	Storage Pile of Aggregate	2017	46,500 TPY	NA	None
SP-SD	SP-AG	Storage Pile of Sand	2017	31,000 TPY	NA	None
HR-AG	HR-AG	Paved Haulroads - Aggregate Trucks	2017	46,500 TPY	NA	HR-AG-Control
HR-CT	HR-CT	Paved Haulroads - Cement Tanker	2017	10,125 TPY	NA	HR-CT-Control
HR-CON	HR-CON	Paved Haulroads - Concrete Mixer	2017	95,000 TPY	NA	HR-CON-Control
HR-END	HR-END	Paved Haulroads - Endloader	2017	31,000 TPY	NA	HR-END-Control
TANK	TANK	500-gal Diesel Tank	2017	500 gal	NA	None

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

ATTACHMENT J
EMISSIONS POINTS DATA SUMMARY SHEET

.Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data															
Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions[4]		Maximum Potential Controlled Emissions[5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used[6]	Emission Concentration[7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
MT-AG	NA	MT-AG	Transfer of Aggregate	MT-AG-Control	MT-AG-Control	NA	NA	PM PM-10	0.56 0.27	0.80 0.38	0.39 0.19	0.56 0.27	Solid	AP-42	NA
MT-SD	NA	MT-SD	Transfer of Sand	MT-SD-Control	MT-SD-Control	NA	NA	PM PM-10	0.11 0.05	0.16 0.08	0.08 0.04	0.11 0.05	Solid	AP-42	NA
MT-CT	NA	MT-CT	Transfer of Cement	MT-CT-Control	MT-CT-Control	NA	NA	PM PM-10	3.78 1.45	16.57 6.35	3.78E-3 1.45E-3	1.66E-2 6.35E-3	Solid	AP-42	NA
SP-AG	NA	SP-AG	Storage Pile of Aggregate	None	None	NA	NA	PM PM-10	0.02 0.01	0.10 0.05	0.02 0.01	0.10 0.05	Solid	AP-42	NA
SP-SD	NA	SP-SD	Storage Pile of Sand	None	None	NA	NA	PM PM-10	0.05 0.03	0.24 0.11	0.05 0.03	0.24 0.11	Solid	AP-42	NA
HR-AG	NA	HR-AG	Paved Haulroads-Aggregate Trucks	HR-AG-Control	HR-AG-Control	NA	NA	PM PM-10	22.18 1.09	31.72 1.55	11.09 0.54	15.86 0.78	Solid	AP-42	NA

HR-CT	NA	HR-CT	Paved Haulroads-Cement Tanker	HR-CT-Control	HR-CT-Control	NA	NA	PM PM-10	3.31 0.16	4.74 0.23	1.66 0.08	2.37 0.12	Solid	AP-42	NA
HR-CON	NA	HR-CONT	Paved Haulroads-Concrete Mixer	HR-CON-Control	HR-CON-Control	NA	NA	PM PM-10	21.04 1.00	30.09 1.43	10.52 0.50	15.04 0.71	Solid	AP-42	NA
HR-END	NA	HR-END	Paved Haulroads-Endloader	HR-END-Control	HR-END-Control	NA	NA	PM PM-10	5.11 0.18	7.31 0.25	2.56 0.09	3.66 0.13	Solid	AP-42	NA
TANK	NA	TANK	500 gal Diesel Refueling Tank	NA	NA	NA	NA	VOC	Neg	Neg	Neg	Neg	Vapor	EE	NA

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

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

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

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

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

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

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

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

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data								
Emission Point ID No. *(Must match Emission Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (^{o}F)	Volumetric Flow [1] (acfm) *at operating conditions*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height [2] *(Release height of emissions above ground level)*	Northing	Easting
MT-CT	0.54	Ambient	600	2	1325	1375	4,379.279	586.798

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

ATTACHMENT K
FUGITIVE EMISSIONS SUMMARY SHEET

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS
1.) Will there be haul road activities? ☒ Yes ☐ No ☒ If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles? ☒ Yes ☐ No ☒ If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations? ☐ Yes ☒ No ☐ If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)? ☐ Yes ☒ No ☐ If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered “NO” to all of the items above, it is not necessary to complete the following table, “Fugitive Emissions Summary.”

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants - Chemical Name/CAS [1]	Maximum Potential Uncontrolled Emissions [2]		Maximum Potential Controlled Emissions [3]		Est. Method Used [4]
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads (HR-AG, HR-CT, HR-CON, and HR-END)	PM PM-10	51.65 2.42	73.86 3.47	25.82 1.21	36.93 1.73	AP-42
Unpaved Haul Roads	NA					
Storage Pile Emissions (SP-AG and SP-SD)	PM PM-10	0.08 0.04	0.34 0.16	0.08 0.04	0.34 0.16	AP-42
Loading/Unloading Operations	NA					
Wastewater Treatment Evaporation & Operations	NA					
Equipment Leaks	NA	Does not apply	Does not apply	Does not apply	Does not apply	
General Clean-up VOC Emissions	NA					
Other: Transfer Point Emissions (MT-AG, MT-SD, and MT-CT)	PM PM-10	4.46 1.77	17.54 6.81	0.48 0.23	0.69 0.33	AP-42

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

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

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

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

ATTACHMENT L
EMISSIONS UNIT DATA SHEETS

CBP MATERIAL STORAGE & HANDLING AFFECTED SOURCE SHEET

Source Identification Number[1]	MT-AG	MT-SD	MT-CT	MT-CT		
Material Stored[2]	Aggregate	Sand	Cement	Cement Supplement		
Maximum Yearly Throughput (tons/year)[3]	46,500	31,000	10,125	3,375		
Typical Moisture Content (%)[4]	5%	3%	- -	- -		
Average % of Material Passing Through 200 Mesh Sieve[5]	- -	5 - 10%	100	100		
Maximum Stockpile Base Area (ft^2)[6]	600	600	- -	- -		
Maximum Stockpile Height (ft)[7]	20	20	--	--		
Maximum Storage Capacity (tons)[8]	25	25	50	25		
Dust Control Method Applied to Storage[9]	OT-3-Sided Enclosure	OT-3-Sided Enclosure	FE	FE		
Method of Material Load-in to Bin or Stockpile[10]	TD, FE, SS	TD, FE, SS	OT-Pneumatic	OT-Pneumatic		
Dust Control Method Applied During Load-in[11]	MD	MD	FE,OT-Filter Vent	FE,OT-Filter Vent		
Method of Material Load-out from Bin or Stockpile[10]	FE, SS	FE, SS	FE,OT-Filter Vent	FE,OT-Filter Vent		
Dust Control Method Applied During Load-out[11]	MD	MD	FE,OT-Filter Vent	FE,OT-Filter Vent		

1. Enter the appropriate Source Identification Number for each storage activity using the following codes. For example, if the facility utilizes four open stockpiles and one storage silo, the Source Identification Numbers should be OS-1, OS-2, OS-3, and OS-4; and BS-1, respectively.
   OS Open Stockpile — E3 Enclosure (three-sided enclosure)
   BS Bin or Storage Silo (full enclosure) — SB Storage Building (full enclosure)
   SF Stockpiles with wind fences — OT Other: see code attachment (please specify)
2. Describe the type of material stored or stockpiled.
3. Enter the maximum yearly storage throughput for each storage activity.
4. Enter the average percent moisture content of the stored material.
5. Enter the average percent of material that will pass through a 200 mesh sieve.
6. For stockpiles, enter the maximum stockpile base area.
7. For stockpiles, enter the maximum stockpile height.
8. Enter the maximum storage capacity for each storage activity in tons (e.g. silo capacity, maximum stockpile size, etc.).
9. Enter the dust control method applied to storage activity using the following codes:
   CA Crusting Agent — WS Water Spray
   FE Full Enclosure — NO None
   OT Other _____(please specify)
10. Enter the method of load-in or load-out to/from stockpiles or bins using the following codes:
   FE Front Endloader — SS Stationary Conveyor/Stacker
   ST Stacking Tube — MC Mobile Conveyor/Stacker
   CS Clamshell — TD Truck Dump
   OT Other_____(please specify)
11. Enter the dust control method applied during load-in or load-out using the following codes:
   CA Crusting Agent — WS Water Spray
   FE Full Enclosure — MD Minimize Drop Height
   ST Stacking Tube — NO None
   OT Other see code attachment _____(please specify)

Attachment L
FUGITIVE EMISSIONS FROM UNPAVED HAULROADS

UNPAVED HAULROADS (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

		PM	PM-10
k =	Particle size multiplier	N/A	
s =	Silt content of road surface material (%)		
p =	Number of days per year with precipitation >0.01 in.		

Item Number	Description	Number of Wheels	Mean Vehicle Weight (tons)	Mean Vehicle Speed (mph)	Miles per Trip	Maximum Trips per Hour	Maximum Trips per Year	Control Device ID Number	Control Efficiency (%)
1	Not Applicable								
2									
3									
4									
5									
6									
7									
8									

Source: *AP-42 Fifth Edition – 13.2.2 Unpaved Roads*

$E = k \times 5.9 \times (s \div 12) \times (S \div 30) \times (W \div 3)^{0.7} \times (w \div 4)^{0.5} \times ((365 - p) \div 365) =$ lb/Vehicle Mile Traveled (VMT)

Where:

		PM	PM-10
k =	Particle size multiplier	N/A	
s =	Silt content of road surface material (%)		
S =	Mean vehicle speed (mph)		
W =	Mean vehicle weight (tons)		
w =	Mean number of wheels per vehicle		
p =	Number of days per year with precipitation >0.01 in.		

For lb/hr: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] = lb/hr

For TPY: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] × [Ton ÷ 2000 lb] = Tons/year

SUMMARY OF UNPAVED HAULROAD EMISSIONS

Item No.	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
1	Not Applicable							
2								
3								
4								
5								
6								
7								
8								
TOTALS								

FUGITIVE EMISSIONS FROM PAVED HAULROADS

INDUSTRIAL PAVED HAULROADS (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

I =	Industrial augmentation factor (dimensionless)	See Calculations for
n =	Number of traffic lanes	Emission Estimate Methodology
s =	Surface material silt content (%)	
L =	Surface dust loading (lb/mile)	

Item Number	Description	Mean Vehicle Weight (tons)	Miles per Trip	Maximum Trips per Hour	Maximum Trips per Year	Control Device ID Number	Control Efficiency (%)
1	Aggregate Trucks	27.5	0.128	12	32,109	HR-AG-Control	50
2	Cement Tanker	40	0.106	3	5,790	HR-CT-Control	50
3	Concrete Mixer	25.82	0.087	17	7,785	HR-CON-Control	50
4	Enloader	13.5	0.067	11	29,211	HR-END-Control	50
5							
6							
7							
8							

Source: *AP-42 Fifth Edition – 11.2.6 Industrial Paved Roads*

$E = 0.077 \times I \times (4 \div n) \times (s \div 10) \times (L \div 1000) \times (W \div 3)^{0.7}$ = lb/Vehicle Mile Traveled (VMT)

Where:

I =	Industrial augmentation factor (dimensionless)	
n =	Number of traffic lanes	
s =	Surface meterial silt content (%)	
L =	Surface dust loading (lb/mile)	
W =	Average vehicle weight (tons)	

For lb/hr: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] = lb/hr

For TPY: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] × [Ton ÷ 2000 lb] = Tons/year

SUMMARY OF PAVED HAULROAD EMISSIONS

Item No.	Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY
1	22.18	31.72	11.09	15.86
2	3.31	4.74	1.66	2.37
3	21.04	30.09	10.52	15.04
4	5.11	7.31	2.56	3.66
5				
6				
7				
8				
TOTALS	51.65	73.86	25.82	36.93

CBP STORAGE TANK AFFECTED SOURCE SHEET

Source Identification Number[1]	Content[2]	Length[3] (ft)	Dia[4] (ft)	Volume[5] (gallons)	Throughput[6] (gal/yr)	Orientation[7]	Liquid Height[8] (ft)
TANK	Diesel	8	3	500	60000	HORZ	3

1.Enter the appropriate Source Identification Number for each storage tank located at the concrete batch plant. Storage tanks should be designated T-1, T-2, T-3, etc.
2.Enter storage tank content (#2 fuel oil, asphaltic cement, water, etc.)
3.Enter storage tank length in feet.
4.Enter storage tank diameter in feet.
5. Enter storage tank volume in gallons. Storage tank volume may be calculated using the following mathematical relationship:
(length of tank) X (area conversion) X (tank diameter)^2 X (liquid volume conversion) or,
(L_{tank} ft) X (3.14/4) X (d^2_{tank} ft^2) X (7.48 gallons/ft^3)
6. Enter storage tank throughput in gallons per year.
7. Enter storage tank orientation using the following codes:
VERT Vertical Tank HORZ Horizontal Tank
8. Enter storage tank average liquid height in feet.
9. Storage tank emissions may be calculated using TANKS emission calculation program.

ATTACHMENT M
AIR POLLUTION CONTROL DEVICES

AIR POLLUTION CONTROL DEVICE AFFECTED SOURCE SHEET

CBP Air Pollution Control Device Data Sheet		Fabric Filter Baghouse	Filter Vent	Fabric Filter Discharge Sock
General Information	APCD Identification Number[1]		MT-CT-Control	
	Manufacturer & Model Number		Vince Hagen VH245JP	
	Number of Compartments			
	Gas Inlet Area (ft^2)		5.05	
	Gas Outlet Area (ft^2)		0.226	
	Fabric Filter Cleaning Mechanism[2]		Pulse Jet	
	Total Cloth (fabric) Area (ft^2)		245	
	Draft Fan HP			
	Outlet Stack Area (ft^2)			
Operational Parameters	Minimum Design PD (in H_2O)			
	Maximum Design PD (in H_2O)			
	Inlet Gas Flow Rate (ACFM)		600	
	Inlet Gas Temperature (^oF)		70	
	Inlet Gas Pressure (PSIA)			
	Inlet Gas Velocity (ft/sec)		2	
	PM Inlet Rate (grains/scf)			
	PM Outlet Rate (grains/scf)			
	Operating Air/Cloth Ratio (ft/min)		2.45	

1. Enter the appropriate Air Pollution Control Device Identification Number for each fabric filter baghouse, filter vent or discharge sock. The devices should be designated APCD-1, APCD-2, APCD-3, etc.
2. Enter method used to clean bags: shaker, pulse jet, reverse jet or other.
3. Complete more than one CBP Air Pollution Control Device Data Sheet if necessary.
4. Enter the fractional efficiency of the fabric filter baghouse.

VINCE HAGAN

CONCRETE BATCHING EQUIPMENT

DUST COLLECTION JET PULSE SYSTEMS

Free Standing
Jet Pulse Dust Collecotr

In-Truss Jet Pulse Dust Collector

Silo Top
Jet Pulse Dust Collector

ENVIRONMENTAL INNOVATION... Since 1956 the Vince Hagan Company has been dedicated to innovation in keeping the environment safe and clean. Innovation that has led to the patented design of a horizontal mixer used in hazardous sludge remediation, reclaimers used to keep concrete job sites clean, and dust control systems for every application which are keeping the air we all breathe a whole lot cleaner.

WWW.VINCEHAGAN.COM

“A dust control solution for any concrete batch plant from the inventor of the mobile concrete plant.”

Let the Vince Hagan Company solve your concrete batch plant dust control problems with a free-standing, in-truss, or portable collector. Hagan can take any existing plant, stationary or portable, and retro-fit a dust collection system. Then let an optional fully automatic dust reclaim system pay for your collector by recycling the dust into the fly ash.

DUST CONTROL

1 - FREE STANDING JET PULSE DUST COLLECTOR

2 - DUCTWORK

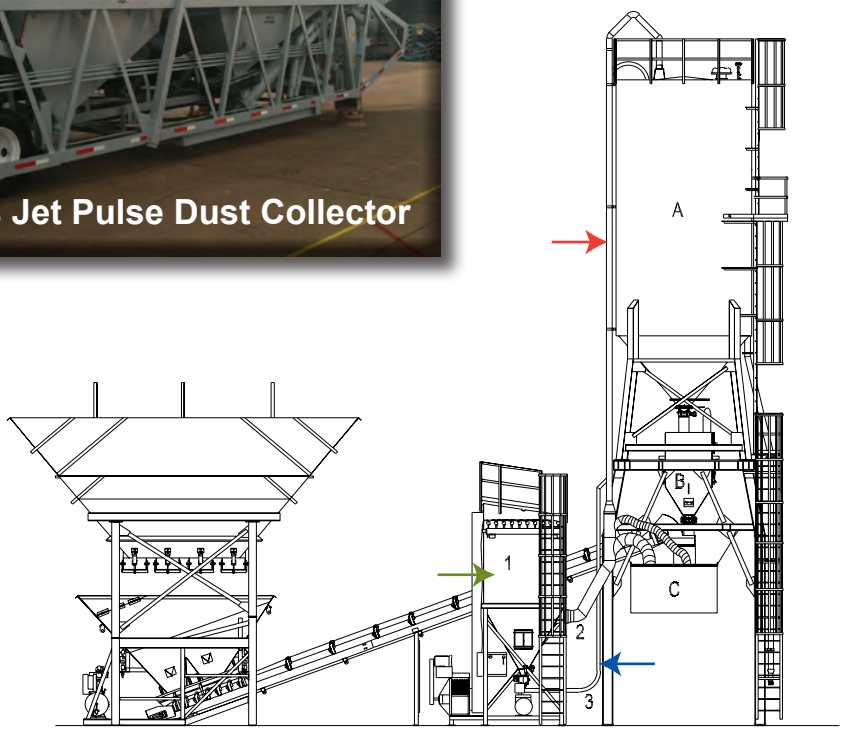
3 - DUST RETURN LINE

EXISTING PLANT

A - CEMENT SILO

B - WEIGH BATCHER

C - DUST SHROUD TRUCK FEED POINT



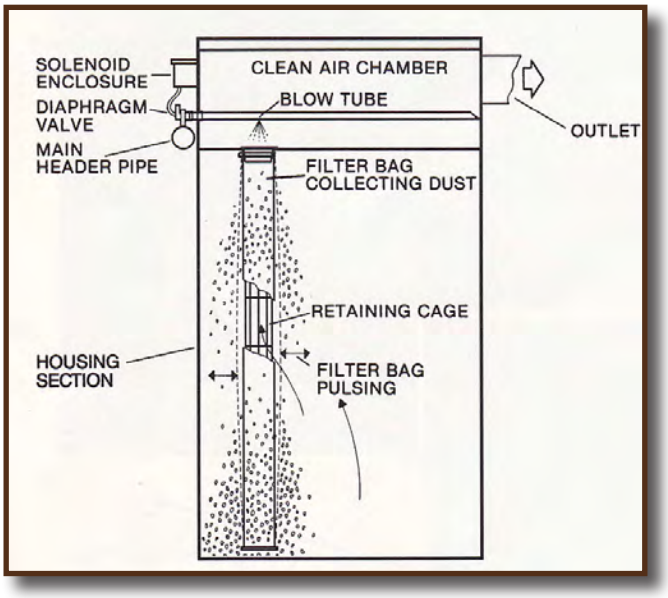
Jet-Pulse Technology... “How it works” continuous cleaning without operator assistance is Jet-Pulse technology.

The technology behind the Hagan Jet-Pulse Dust Collection System is that each row of filter bags is equipped with a solid state sequential timer that energizes a solenoid pilot valve, thus triggering the momentary pulse of compressed air through a blow pipe and down into a row of filter bags. This translates to faster and more objective means of controlling dust at your concrete plant.

As the Jet-Pulse Collection system cleans the enviroronment, it also keeps itself clean and makes it easy for anyone to change our heavy duty, snap-in filter bags.

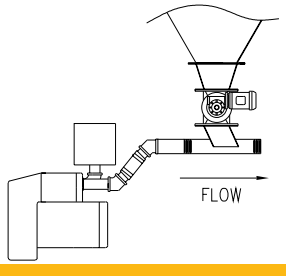
If something doesn’t cut your bottom line, it gets cut! The Vince Hagan Company understands this. That’s why efficiency of the Jet-Pulse Dust Collection system is important. Our dust control system not only keeps the neighborhood clean and happy, but it also provides the option of recycling the collected dust.

A. Dust laden air enters the collector through the bottom of the housing section.
B. Dust particles are collected on the outside surface of the bags.
C. Filtered air goes to the clean air chamber and is then exhausted through the outlet.
D. Periodic pulsing by compressed air removes the accumulated dust from the bags.
E. Dust falls into a receptacle.
F. Cleaning frequency and duration are adjustable by solid state timers.

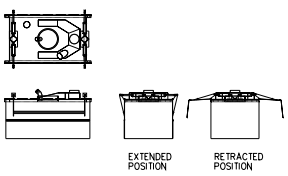


Dust Collection System Options

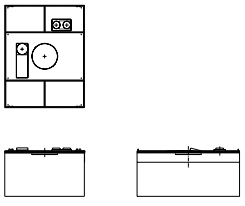
Dust Reclaim with Rotary Vane Feeder



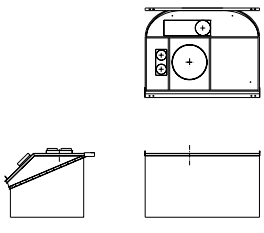
Drive Through Four-Sided Shroud



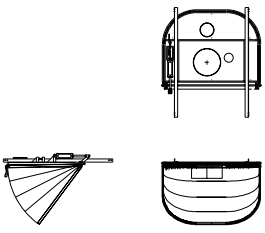
Stationary Fixed Shroud



Shroud Back In



Baby Buggy Shroud



MODEL JP "JET PULSE"
CENTRAL DUST COLLECTORS

SPECIFICATIONS
Jet-Pulse Dust Collector

Model	Cloth Area (Sq. Ft.)	No. of Bags	ACFM	Blower H.P.	A/C Ratio
VH-700JP	700	64	4,900	7.5	7:1
VH-730JP	730	64	5,100	10	7:1
VH-1083JP	1083	99	6,500	15	6:1
VH-1094JP	1094	100	6,500	15	6:1
VH-1203JP	1203	110	7,200	15	6:1
VH-1432JP	1423	130	8,500	25	6:1

Hagan Jet-Pulse Filter Bag

Efficiency	99.9% At 1 Microns
Cloth Type	Polyester Felt
Cloth Weave	Polyester .065 (Nom)
Permeability	25 to 45 CFM/Sq. Ft. @ /.5 w.g.
Bag Weight	15.5 ± 1 Oz./Sq. Ft.
Construction	Needle punched self supported
Bag Length	84"
Bag Diameter	6"

Specifications
Model VH-245JP

Cloth Filtering Area	245 Sq. Ft.
Number of Cartridges	7
Cartridge Diameter	8.00" O.D.
Cartridge Length	36"
Cloth Type	Spun-Bound Polyester
Cloth Weight	7.7 Oz./Sq. Yd.
Permeability	20 CFM/Sq. Ft. @ 0.5" Water
Temperature Limit	200 Deg. F.
Air Volume Intake	600 CFM@ 0.5" Water
Exhaust Opening Size	0.24 Sq. Ft.
Efficiency	99.9% At 1 Microns

MADE IN THE U.S.A

VINCE HAGAN

P.O. Box 655141
Dallas, Texas 75265-5141
Sales@VinceHagan.com
1.800.354.3238
WWW.VINCEHAGAN.COM

CONCRETE PLANT CPMB MANUFACTURERS BUREAU
PLANT MIXER PMMD MANUFACTURERS DIVISION
AIR QUALITY AQMD MANUFACTURERS DIVISION
NRMCA NATIONAL READY MIXED CONCRETE ASSOCIATION
ACPA
AEM

ATTACHMENT N
EMISSION CALCULATIONS

Civil & Environmental Consultants, Inc.

SUBJECT	Summary of Emissions			PROJECT NO.	144-205		
PROJECT	Wendell H. Stone & Company						
	Monongalia County						
MADE BY:	BNB	DATE:	2/13/2017	CHECKED BY:	JLG	DATE:	2/17/2017

Overall Project Assumptions			**Basis of Assumption**
Total Concrete Generated at Site	50,000	yd^3/yr	Voluntary Permit Limit
Concrete Density	3,800	lb/yd^3	Industry Standard
Total Concrete Generated at Site	95,000	tpy	Unit Conversion
Throughput of Aggregate	46,500	tpy	Assumed 3,100 lbs Aggregate/Sand for every 3,800 lb concrete and Aggregate/Sand is 60% Aggregate
Throughput of Sand	31,000	tpy	Assumed 3,100 lbs Aggregate/Sand for every 3,800 lb concrete and Aggregate/Sand is 40% Sand
Throughput of Cement	10,125	tpy	Assumed 540 lbs Cement/Cement Supplement for every 3,800 lb concrete and Cement/Cement Supplement is 75% Cement
Throughput of Supplemental Cement	3,375	tpy	Assumed 540 lbs Cement/Cement Supplement for every 3,800 lb concrete and Cement/Cement Supplement is 25% Cement Supplement
Daily Operation	10.0	hrs/day	Voluntary Permit Limit
Weekly Operation	6	days/week	Voluntary Permit Limit
Annual Operation	52	weeks/year	Voluntary Permit Limit
Annual Operation	2,860	hours/year	Voluntary Permit Limit

Civil & Environmental Consultants, Inc.

SUBJECT	Summary of Emissions			PROJECT NO.	144-205
PROJECT	Wendell H. Stone & Company				
	Monongalia County				
MADE BY:	BNB	DATE:	2/13/2017	CHECKED BY: JLG	DATE: 2/17/2017

MATERIAL TRANSFER

MT-AG or Aggregate Transfer Emissions (3-05-011-04,-21,23)

e= 0.0069 lb/ton (PM emission factor) e= 0.0033 lb/ton (PM-10 emission factor)

Transfer Point	Transfer Rate (TPH)	Transfer Rate (TPY)	Type of Control	Control Efficiency	PM (lb/hour)	PM-10 (lb/hour)	PM TPY	PM-10 TPY
dump truck to stockpile	16.26	46,500	none	0	0.1122	0.0537	0.1604	0.0767
loader to stockpile	0.00	0	none	0	0	0	0	0
loader to feed hopper	16.26	46,500	none	0	0.1122	0.0537	0.1604	0.0767
hopper to conveyor	0.00	0	none	0	0.0000	0.0000	0.0000	0.0000
conveyor to bin	16.26	46,500	Partial Enclosure	50	0.0561	0.0268	0.0802	0.0384
bin to scale hopper	16.26	46,500	Partial Enclosure	50	0.0561	0.0268	0.0802	0.0384
conveyor to mixer truck	16.26	46,500	Partial Enclosure	50	0.0561	0.0268	0.0802	0.0384
				Total Aggregate Transfer Emissions	0.3926	0.1878	0.5615	0.2685

MT-SD or Sand Transfer Emissions (3-05-011-05,22,24)

e= 0.0021 lb/ton (PM emission factor) e= 0.00099 lb/ton (PM-10 emission factor)

Transfer Point	Transfer Rate (TPH)	Transfer Rate (TPY)	Type of Control	Control Efficiency	PM (lb/hour)	PM-10 (lb/hour)	PM TPY	PM-10 TPY
Dump truck to stockpile	10.84	31,000	none	0	0.0228	0.0107	0.0326	0.0153
loader to stockpile	0.00	0	none	0	0	0	0	0
loader to feed hopper	10.84	31,000	none	0	0.0228	0.0107	0.0326	0.0153
hopper to conveyor	0.00	0	none	0	0.0000	0.0000	0.0000	0.0000
conveyor to bin	10.84	31,000	Partial Enclosure	50	0.0114	0.0054	0.0163	0.0077
bin to scale hopper	10.84	31,000	Partial Enclosure	50	0.0114	0.0054	0.0163	0.0077
conveyor to mixer truck	10.84	31,000	Partial Enclosure	50	0.0114	0.0054	0.0163	0.0077
				Total Sand Transfer Emissions	0.0797	0.0376	0.1139	0.0537

MT-CT or Cement Transfer Emissions

Cement Unloading to Silo (3-05-011-07)

e= 0.73 lb/ton (PM emission factor) e= 0.47 lb/ton (PM-10 emission factor)

Transfer Point	Transfer Rate (TPH)	Transfer Rate (TPY)	Type of Control	Control Efficiency	PM (lb/hour)	PM-10 (lb/hour)	PM TPY	PM-10 TPY
Truck to cement silo	1.16	10,125	Full Enclosure Vented to Baghouse	99.9	0.00084	0.00054	0.0037	0.0024

Cement Supplement Unloading to Silo (3-05-011-17)

e= 3.14 lb/ton (PM emission factor) e= 1.1 lb/ton (PM-10 emission factor)

Transfer Point	Transfer Rate (TPH)	Transfer Rate (TPY)	Type of Control	Control Efficiency	PM (lb/hour)	PM-10 (lb/hour)	PM TPY	PM-10 TPY
Truck to cement silo	0.39	3,375	Full Enclosure Vented to Baghouse	99.9	0.00121	0.00042	0.00530	0.00186

Weigh Hopper Loading (3-05-011-08)

e= 0.0048 lb/ton (PM emission factor) e= 0.0028 lb/ton (PM-10 emission factor)

Transfer Point	Transfer Rate (TPH)	Transfer Rate (TPY)	Type of Control	Control Efficiency	PM (lb/hour)	PM-10 (lb/hour)	PM TPY	PM-10 TPY
Silo to cement weigh bin	1.54	13,500	Full Enclosure Vented to Baghouse	99.9	0.0000074	0.0000043	0.0000324	0.0000189

Central Mixer Loading (3-05-011-09)

e= 0.572 lb/ton (PM emission factor) e= 0.156 lb/ton (PM-10 emission factor)

Transfer Point	Transfer Rate (TPH)	Transfer Rate (TPY)	Type of Control	Control Efficiency	PM (lb/hour)	PM-10 (lb/hour)	PM TPY	PM-10 TPY
Cement weigh bin to truck	0	0	N/A		0.0000	0.0000	0.0000	0.0000

Truck Loading (3-05-011-10)

e= 1.118 lb/ton (PM emission factor) e= 0.31 lb/ton (PM-10 emission factor)

Transfer Point	Transfer Rate (TPH)	Transfer Rate (TPY)	Type of Control	Control Efficiency	PM (lb/hour)	PM-10 (lb/hour)	PM TPY	PM-10 TPY
Cement weigh bin to truck	1.54	13,500	Full Enclosure Vented to Baghouse	99.9	0.0017	0.00048	0.0075	0.0021
				Total Cement Transfer Emissions	3.78E-03	1.45E-03	1.66E-02	6.35E-03
				Total Transfer Emissions	0.4761	0.2268	0.6920	0.3286

Civil & Environmental Consultants, Inc.

SUBJECT	Summary of Emissions			PROJECT NO.	144-205
PROJECT	Wendell H. Stone & Company				
	Monongalia County				
MADE BY:	BNB	DATE:	2/13/2017	CHECKED BY: JLG	DATE: 2/17/2017

Roadway Emissions

HR-AG or Paved Haulroads - Aggregate Trucks

PM Emissions			PM-10 Emissions		
k	0.011	base emission factor for particle	k	0.0027	particle size multiplier (assumed)
sL	70	road surface silt load (g/m^2)	sL	70	road surface silt load (g/m^2)
W	27.5	mean vehicle weight (tons)	W	27.5	mean vehicle weight (tons)
P	150	# of wet days with at least 0.01" precipitation	P	150	# of wet days with at least 0.01" precipitation
C	0.00047	emission factor for break/tire wear	C	0.00047	emission factor for break/tire wear
N	365	# of days in averaging period	N	365	# of days in averaging period
e	15.44	LB/VMT	e	0.76	LB/VMT
TRAVEL	1.437	VMT/hour	TRAVEL	1.437	VMT/hour
TRAVEL	4109.848	VMT/year	TRAVEL	4109.848	VMT/year
CONTROLS	50	control efficiency (%)	CONTROLS	50	control efficiency (%)

Emissions (lb/hour)	11.09	Emissions (lb/hour)	0.54
Emissions (TPY)	15.86	Emissions (TPY)	0.78

HR-CT or Paved Haulroads - Cement Tanker

PM Emissions			PM-10 Emissions		
k	0.011	base emission factor for particle	k	0.0027	particle size multiplier (assumed)
sL	70	road surface silt load (g/m^2)	sL	70	road surface silt load (g/m^2)
W	27.5	mean vehicle weight (tons)	W	27.5	mean vehicle weight (tons)
P	150	# of wet days with at least 0.01" precipitation	P	150	# of wet days with at least 0.01" precipitation
C	0.00047	emission factor for break/tire wear	C	0.00047	emission factor for break/tire wear
N	365	# of days in averaging period	N	365	# of days in averaging period
e	15.44	LB/VMT	e	0.76	LB/VMT
TRAVEL	0.215	VMT/hour	TRAVEL	0.215	VMT/hour
TRAVEL	613.636	VMT/year	TRAVEL	613.636	VMT/year
CONTROLS	50	control efficiency (%)	CONTROLS	50	control efficiency (%)

Emissions (lb/hour)	1.66	Emissions (lb/hour)	0.08
Emissions (TPY)	2.37	Emissions (TPY)	0.12

HR-CON or Paved Haulroads - Concrete Mixer

PM Emissions			PM-10 Emissions		
k	0.011	base emission factor for particle	k	0.0027	particle size multiplier (assumed)
sL	70	road surface silt load (g/m^2)	sL	70	road surface silt load (g/m^2)
W	25.82	mean vehicle weight (tons)	W	25.82	mean vehicle weight (tons)
P	150	# of wet days with at least 0.01" precipitation	P	150	# of wet days with at least 0.01" precipitation
C	0.00047	emission factor for break/tire wear	C	0.00047	emission factor for break/tire wear
N	365	# of days in averaging period	N	365	# of days in averaging period
e	14.48	LB/VMT	e	0.69	LB/VMT
TRAVEL	1.454	VMT/hour	TRAVEL	1.454	VMT/hour
TRAVEL	4157.214	VMT/year	TRAVEL	4157.214	VMT/year
CONTROLS	50	control efficiency (%)	CONTROLS	50	control efficiency (%)

Emissions (lb/hour)	10.52	Emissions (lb/hour)	0.50
Emissions (TPY)	15.04	Emissions (TPY)	0.71

HR-END or Paved Haulroads - Endloader

PM Emissions			PM-10 Emissions		
k	0.011	base emission factor for particle	k	0.0027	particle size multiplier (assumed)
sL	70	road surface silt load (g/m^2)	sL	70	road surface silt load (g/m^2)
W	13.5	mean vehicle weight (tons)	W	13.5	mean vehicle weight (tons)
P	150	# of wet days with at least 0.01" precipitation	P	150	# of wet days with at least 0.01" precipitation
C	0.00047	emission factor for break/tire wear	C	0.00047	emission factor for break/tire wear
N	365	# of days in averaging period	N	365	# of days in averaging period
e	7.47	LB/VMT	e	0.26	LB/VMT
TRAVEL	0.684	VMT/hour	TRAVEL	0.684	VMT/hour
TRAVEL	1957.071	VMT/year	TRAVEL	1957.071	VMT/year
CONTROLS	50	control efficiency (%)	CONTROLS	50	control efficiency (%)

Emissions (lb/hour)	2.56	Emissions (lb/hour)	0.09
Emissions (TPY)	3.66	Emissions (TPY)	0.13

			Civil & Environmental Consultants, Inc.				
SUBJECT	Summary of Emissions			PROJECT NO.	144-205		
PROJECT	Wendell H. Stone & Company						
	Monongalia County						
MADE BY:	BNB	DATE:	2/13/2017	CHECKED BY:	JLG	DATE:	2/17/2017

Wind Erosion for Storage Piles

Aggregate

PM Emissions			PM-10 Emissions		
s	10	silt content (%)	s	10	silt content (%)
PM Emissions	150	days of precipitation (assumed)	PM Emissions	150	days of precipitation (assumed)
f	15	time the wind exceeds 12 mph (%)	f	15	time the wind exceeds 12 mph (%)
A	0.013774105	surface area (acres)	A	0.013774105	surface area (acres)
N	4	number of storage piles	N	4	number of storage piles
Controls	0	%	Controls	0	%

Emissions (lb/hour)	0.024	Emissions (lb/hour)	0.011
Emissions (TPY)	0.104	Emissions (TPY)	0.049

Sand

PM Emissions			PM-10 Emissions		
s	30	silt content (%)	s	30	silt content (%)
PM Emissions	150	days of precipitation (assumed)	PM Emissions	150	days of precipitation (assumed)
f	15	time the wind exceeds 12 mph (%)	f	15	time the wind exceeds 12 mph (%)
A	0.013774105	surface area (acres)	A	0.013774105	surface area (acres)
N	3	number of storage piles	N	3	number of storage piles
Controls	0	%	Controls	0	%

Emissions (lb/hour)	0.054	lb/hour	Emissions (lb/hour)	0.025	
Emissions (TPY)	0.235	TPY	Emissions (TPY)	0.110	

Civil & Environmental Consultants, Inc.

SUBJECT	Summary of Emissions			PROJECT NO.	144-205		
PROJECT	Wendell H. Stone & Company						
	Monongalia County						
MADE BY:	BNB	DATE:	2/13/2017	CHECKED BY:	JLG	DATE:	2/17/2017

Emission Source Summary

	PM Emissions		PM-10 Emissions	
Point Source Emissions	**lb/hour**	**TPY**	**lb/hour**	**TPY**
Transfer Point Emissions	0.48	0.69	0.23	0.33
Point Source Emissions Total	**0.48**	**0.69**	**0.23**	**0.33**
Fugitive Emissions				
Paved Haulroad Emissions	25.82	36.93	1.21	1.73
Stockpile Emissions	0.08	0.34	0.04	0.16
Fugitive Emissions Total	**25.90**	**37.27**	**1.25**	**1.89**
Facility Emissions Total	26.38	37.96	1.47	2.22

ATTACHMENT O
MONITORING/RECORDKEEPING/REPORTING AND TESTING PLANS

Monitoring/Recordkeeping/ Reporting/Testing Plans

Monitoring
Wendell H. Stone Company dba Stone & Company, Inc. (Stone) will monitor hours of operation, raw material (cement) throughput, and pressure drop of the filter vent.

Recordkeeping
Stone will retain records certified by a company official for five (5) years, two (2) years on site, at such time that the West Virginia Department of Protection Division of Air Quality may request said records.

Reporting
Stone will comply with the reporting requirements detailed in the operating permit.

Testing
Testing is not anticipated to be required.

ATTACHMENT P
PUBLIC NOTICE

Public Notice

The following Notice of Application will be published in The Dominion Post as required by 45 CSR 13. The legal advertisement affidavit will be forwarded to WVDEP upon receipt.

Notice is given that Wendell H. Stone Company dba Stone & Company, Inc. has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Construction Permit for a Concrete Batch Plant located on 1702 Smithtown Road, in Monongalia County, West Virginia. The site coordinates are: 39.558575°N and 79.989972°W.

The applicant estimates the change in potential to discharge the following Regulated Air Pollutants will be: PM 37.96 tons per year and PM10 2.22 tons per year.

Startup of operations is planned to begin on or about the 1st day of May, 2017. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.
Dated this the 27th day of February, 2017.

By: Wendell H. Stone Company dba Stone & Company, Inc.
Greg Reshenberg
General Manager
1718 Roseytown Road
Greensburg, PA 15601

APPLICATION FEE