Received
November 14, 2024
WV DEP/Div of Air Quality

Division of Air Quality Permit Application Submittal

Please find attached a permit application for : Saint-Gobin Ceramics Plastics, Inc. dba Corhart Refractories

[Company Name; Facility Location]

- DAQ Facility ID (for existing facilities only): 033-00150
- Current 45CSR13 and 45CSR30 (Title V) permits associated with this process (for existing facilities only): R30-09700001-2020

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

- Type of 45CSR30 (TITLE V) Revision (if any)**:
  - ☐ Title V Initial
  - ☐ Title V Renewal
  - ☐ Administrative Update
  - ☐ Minor Modification
  - ☑ Significant Modification
  - ☐ Off Permit Change

**If any box above is checked, include the Title V revision information as ATTACHMENT S to this application.

- Payment Type:
  - ☐ Credit Card (Instructions to pay by credit card will be sent in the Application Status email.)
  - ☐ Check (Make checks payable to: WVDEP – Division of Air Quality)

    Mail checks to:
    WVDEP – DAQ – Permitting
    Attn: NSR Permitting Secretary
    601 57th Street, SE
    Charleston, WV 25304

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

- If the permit writer has any questions, please contact (all that apply):
  - ☐ Responsible Official/Authorized Representative
    - Name: Albin Thomas
    - Email: albin.thomas@saint-gobain.com
    - Phone Number: (304) 473-1214
  - ☑ Company Contact
    - Name: Brian Gregor
    - Email: Brian.Gregor@saint-gobain.com
    - Phone Number: (304) 473-1274
  - ☑ Consultant
    - Name: John Keeling
    - Email: John.Keeling@sj-environmental.com
    - Phone Number: 304-669-9643

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):*
Saint-Gobain Ceramics & Plastics, Inc.

2. Federal Employer ID No. ***(FEIN):***
131780510

3. Name of facility *(if different from above):*
Corhart Refractories

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

5A. Applicant's mailing address:
87 Corhart Rd
Buckhannon, WV 26201

5B. Facility's present physical address:
87 Corhart Rd
Buckhannon, WV 26201

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: **Saint-Gobain Ceramics & Plastics, Inc. dba Corhart Refractories is the owner and operator of the facility.**
- 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.): **Kiln K-26 to be downgraded from Kiln to low-temperature oven**.

10. North American Industry Classification System **(NAICS)** code for the facility:
327100

11A. DAQ Plant ID No. (for existing facilities only):
033-00150

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R30-09700001-2020
R13-2433C

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**.

From US Route 33, leave the 4-lane at the Brushy Fork (state route 7) exit. Westbound, turn right at the light. Eastbound, turn right at the light. After approximately 0.10 mile, turn right onto Old Weston Road. After approx. 0.5 miles, turn left onto Corhart Road. At approximately 0.20 miles, Saint-Gobain / Corhart Refractories is on the left.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
N/A	**Buckhannon**	**Upshur**
12.E. UTM Northing (KM): **4,317.444**	12F. UTM Easting (KM): **565.425**	12G. UTM Zone: **17S**

13. Briefly describe the proposed change(s) at the facility:
Repurpose Kiln K-26 to use as a dryer/low temperature kiln (600 degrees C or less)

14A. Provide the date of anticipated installation or change: 01/01/2020 – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: 01/01/2020	14B. Date of anticipated Start-Up if a permit is granted: **01/01/2020**

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). Reduction in heat input is already ongoing

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day 24 Days Per Week 7 Weeks Per Year 18

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.** – **Not Applicable**

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

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

☒ General Emission Unit, specify **Dryer, operating at less than 600° C.**

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. No Air pollution Control Device**

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

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

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

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

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

☐ **YES** ☒ **NO**

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

Section III. Certification of Information

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

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

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

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

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

Certification of Truth, Accuracy, and Completeness

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

Compliance Certification

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

SIGNATURE _____ DATE: 11/13/2024

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

35B. Printed name of signee: **Albin Thomas**		35C. Title: **Plant Manager**
35D. E-mail: **albin.thomas@saint-gobain.com**	36E. Phone: **(304) 473-1214**	36F. FAX:
36A. Printed name of contact person (if different from above): John Keeling		36B. Title: **Director**
36C. E-mail: jkeeling@benchmarkpllc.com	36D. Phone: **(304) 669-9643**	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.

ATTACHMENTS

ATTACHMENT A

WV Business Registration

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
SAINT-GOBAIN CERAMICS & PLASTICS INC
DBA CORHART REFRACTORIES
87 CORHART RD
BUCKHANNON, WV 26201-4528

BUSINESS REGISTRATION ACCOUNT NUMBER: **1007-4417**

This certificate is issued on: 02/25/2013

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.

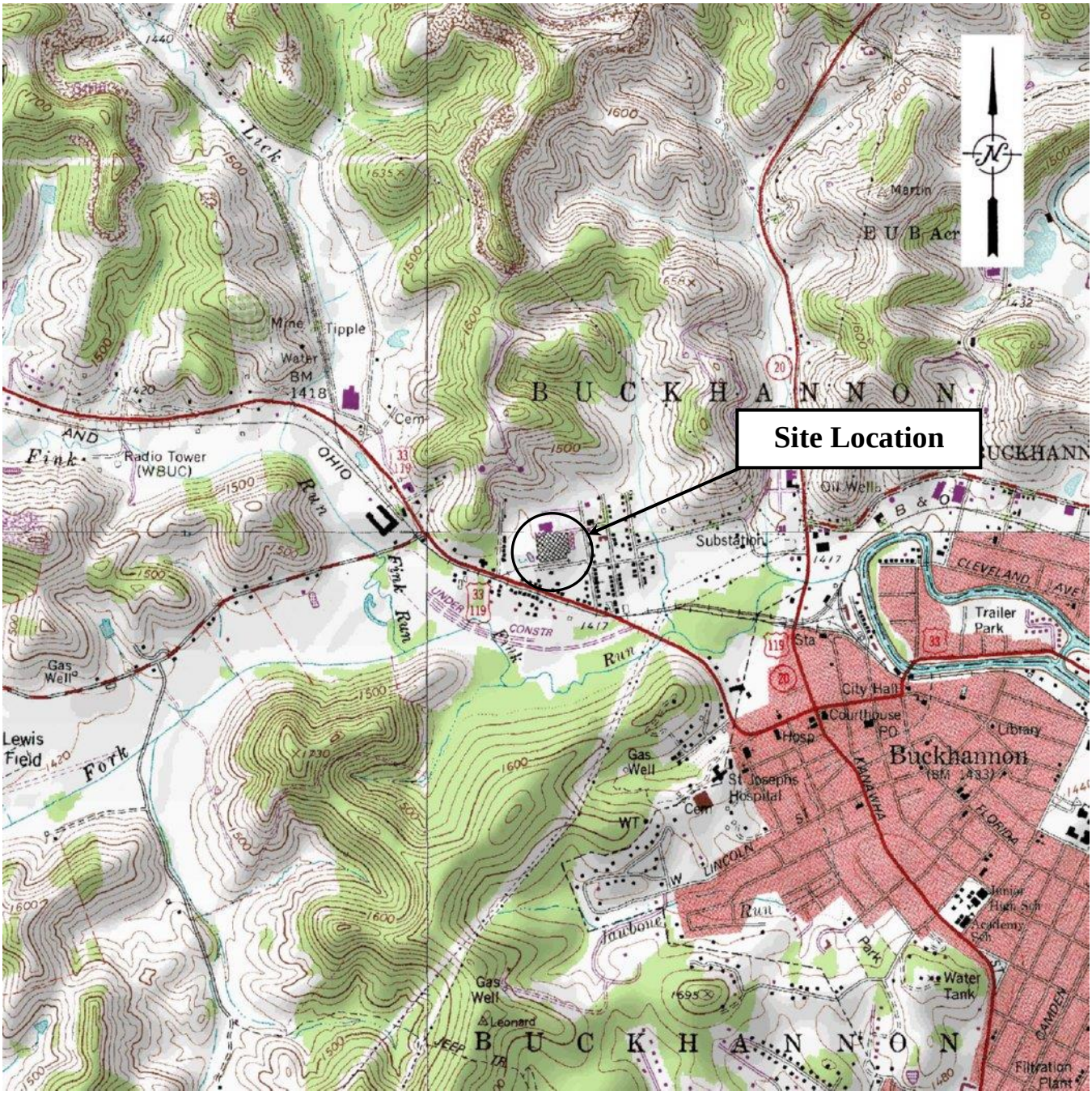
Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

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
L0089439104

ATTACHMENT B

MAPS



Reference:
3-D TopoQuads © DeLorme, Yarmouth, Me 04096
Source Data:
7.5 Minute USGS Topographic Quadrangles

Adrian, WV
Berlin, WV
Buckhannon, WV
Century, WV

Topographic Map

Scale 1" = 2000'

Benchmark
Safety, Health & Environmental Services

400 White Oaks Blvd
Bridgeport, WV 26330
(304) 933-8000

Saint-Gobain Ceramics Plastics, Inc.
dba Corhart Refractories
Buckhannon, WV

Facility Topographic Map

Project No. 110135.00008

Figure 1

ATTACHMENT C

INSTALLATION AND START UP SCHEDULE

ATTACHMENT C
DEMOTION of K-26 from Status of Kiln to Status of Drying Oven

Saint-Gobain (Corhart Refractories) has been operating K-26 as an oven since 2020. The demotion of the Kiln to Oven status has already been implemented. This change in status has resulted in a reduction in emissions from the unit.

ATTACHMENT D
REGULATORY DISCUSSION

ATTACHMENT D
K-26 KILN RE-PURPOSE AS DRYER
REGULATORY DISCUSSION

Kiln K-26 was originally installed for sintering of refractory shapes. Beginning in 2020 the kiln was determined to be limited with respect to high temperature use. Since that time the maximum product temperature is 600 degrees C compared to temperatures in excess of 1480 C. The limited use as a dryer and low temperature sintering for one product line has resulted in the use of significantly less natural gas in recent years.

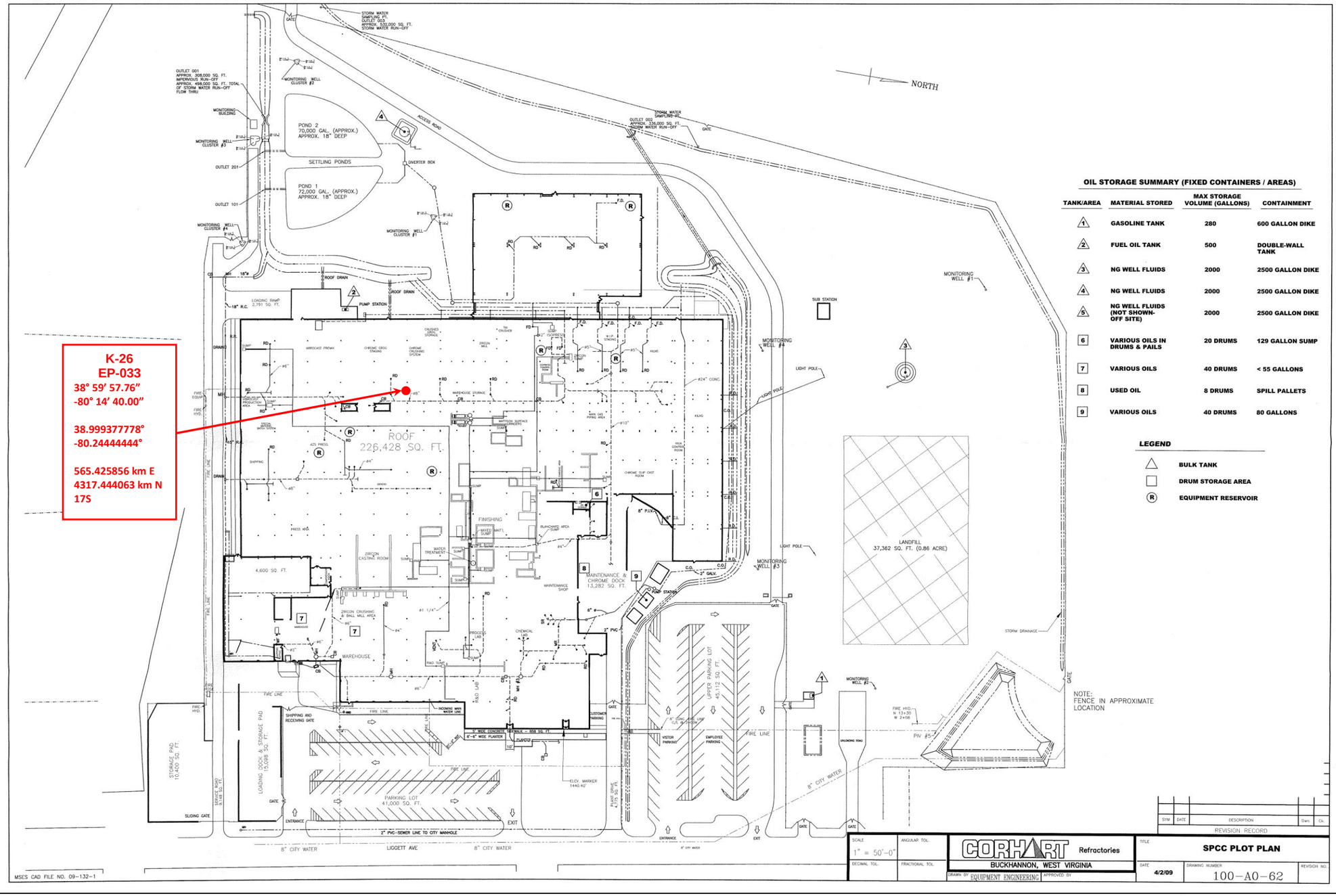
This permit modification is to reflect the current use of K-26 thus reducing the monitoring and recork keeping and allowing for the R30 permit to be modified.

There are no potentially applicable federal or state air emission regulations applicable to this existing emission source except for:

- **45 CSR 4** Odor – no odor is anticipated from the process emissions.
- **45 CSR 7** Particulate emissions and opacity requirements are applicable to these sources. Table 45-7A of the regulation provides maximum allowable stack emissions per hour based on the process which we define as Type "a". The process weight rate for the operation of the repurposed Kiln is 260 pounds per hour, which from the table interpolation results in an allowable particulate emission of 0.32 pounds per hour which is greater than the actual 0.011 lb/hr for PM-10 which is the anticipated particle size or smaller for particulate emissions from the combustion of natural gas to heat the repurposed kiln. This is within the Table 45-7A allowable emission rate.
- **45 CSR 10** Control of Emission of Sulfur Oxides – Source uses natural gas as fuel so sulfur oxide emissions are limited.
- **45 CSR 13** Construction Permit Required for re-purposing of this source.
- **45 CSR 30** Title V Operating Permit which is existing for the facility will be modified to include requirement applicable to this re-purposed source.

ATTACHMENT E

PLOT PLAN



PLOT PLAN

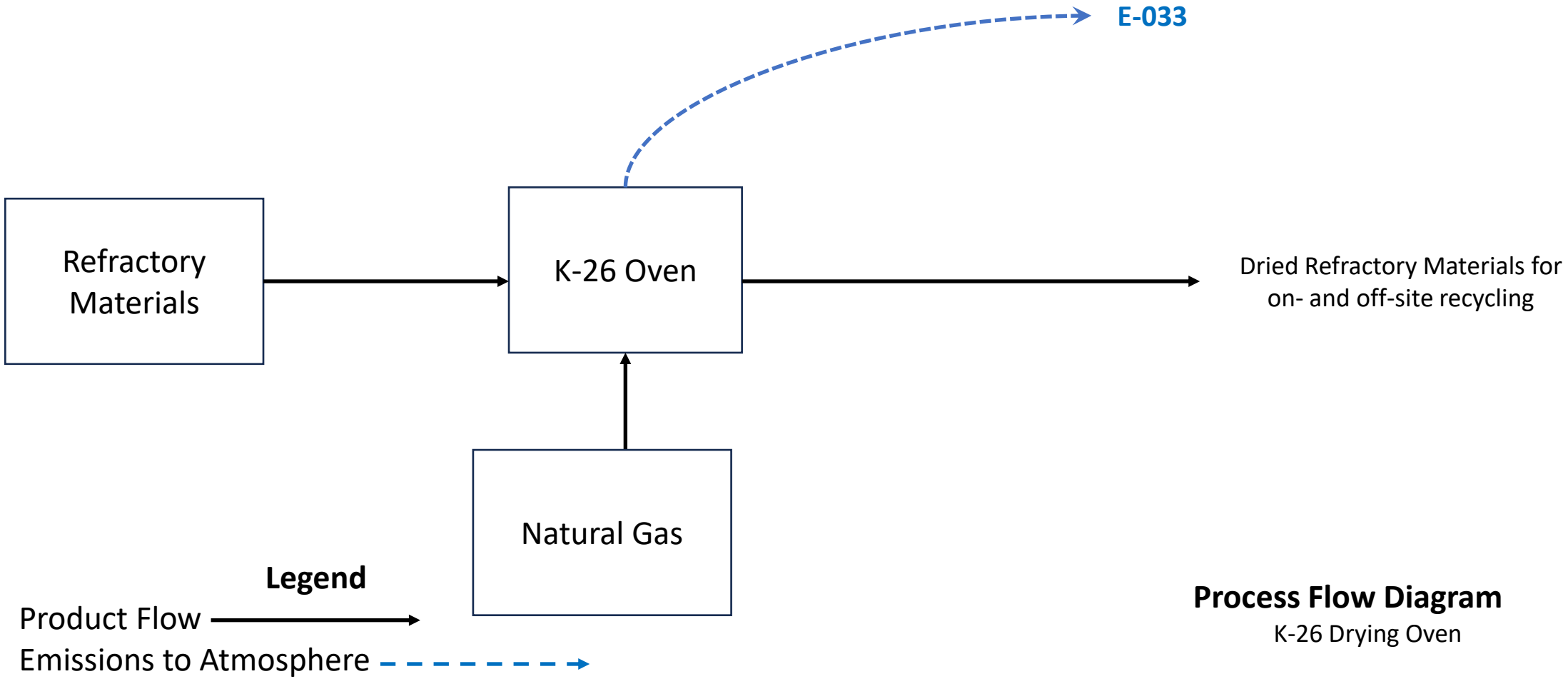
Saint-Gobain Ceramics, Plastics, Inc. dba Corhart Refractories

R13 Modification for K-26 Oven (formerly, a Kiln)
Project No. 110135.00008
ATTACHMENT E

ATTACHMENT F

DETAILED PROCESS FLOW DIAGRAM

ATTACHMENT F



Process Flow Diagram

K-26 Drying Oven

ATTACHMENT G

PROCESS DESCRIPTION

ATTACHMENT G

DRYER K-26 PROCESS DESCRIPTION

This facility has numerous natural gas fueled kilns used for the sintering of ceramic shapes produced at the facility. The modifications requested in this R13 permit Modification is to change the status of an existing natural gas fueled kiln to a low heat dryer. K-26 is listed in R13-2433 as a kiln used for sintering refractory products to a temperature in excess of 1480 degrees Centigrade. This kiln can no longer be operated at high temperatures but can be used for lower temperature sintering and drying at a maximum temperature of 600 degrees Centigrade.

Since 2020, K-26 has been exclusively used for drying, it emits pollutants of natural gas combustion, water vapor, and minimal quantity of polyethylene glycol. The polyethylene glycol is an additive for a product line. Some of that product when determined to be off specification is dried in K-26. Other materials dried in the in K-26 include sawing created sludge.

The use for drying has reduced the natural gas annual maximum consumption from 59.13 million Cubic Feet per year to an annual maximum of 0.5 million cubic feet per year. The reduction in maximum temperature heating and natural gas usage results in a significant reduction in annual potential emissions.

The K-26 drying of the product containing the polyethylene glycol is will result in a maximum annual polyethylene glycol in product to be dried of 220 pounds. During the drying cycle all of the polyethylene glycol in the product will be released with a large percentage of the polyethylene glycol incinerated inside K-26. Since there is no data available to determine the efficiency of incineration, if no reduction in the emission of polyethylene glycol is experienced the maximum hourly emission rate during the drying process will be approximately 1 pound per hour and 0.11 tons per year.

The objective of this change is service of K-26 is the removal of the R-30 permit requirement for stack testing of Kiln K-26 since that Kiln is only used for drying with drying temperatures limited to 600 degrees Centigrade. This is due to the age and condition of the kiln. In order to achieve the R-30 permit modification, DAQ has recommended the R-13 be modified to limit use to a firing temperature of no more than 600 degrees Centigrade.

ATTACHMENT H

SAFETY DATA SHEETS (SDS), MATERIAL SAFETY DATA SHEETS (MSDS)

SDS
BETAPEG 8000

Safety Data Sheet

According to NOM- 018 -STPS 2015

BETAPEG 8000

SECTION I. IDENTIFICATION

I.1 Material Code: BTE1140A **I.2 Language:** English **I.3 Version:** 6

I.4 Issuing date: 21/07/2009 **I.5 Update:** 16/04/2020

I.6 Issuing company name:

Fabricante y Comercializadora Beta S.A. de C.V.
Blvd. C.P.Q. La Cangrejera al C.P.Q. Morelos, Km. 3.0,
Coatzacoalcos, Ver., C.P. 96400, Tel.: (229) 296 155, Ext. 103

I.7 In case of emergency contact:

CHEMTREC (24HR Emergency telephone), call: 1-800-424-9300;
National response in Canada CANUTEC: 613-996-6666; Outside U.S. and Canada CHEMTREC: 703-527-3887

I.8 Commercial name: *BETAPEG 8000*

I.9 Synonyms: *Polyoxyethylene glycol 8000, PEG 8000*

I.10 Applications:

Industrial chemical intermediary

SECTION II. HAZARD(S) IDENTIFICATION

II.1 Risk Classification:

Not a hazardous substance or mixture.

II.2 Label elements GHS:

Word of Warning *Not a hazardous substance or mixture.*

Pictogram:

This product does not require any hazard warning label according to the GHS criteria.

II.3 Precautionary statement (s):

Keep container tightly closed.
Keep away from heat/sparks/open flame. - No smoking.
Wear protective gloves and eye/face protection.
Store in cool/well-ventilated place.
Avoid release to the environment.

II.4 Dangerous not otherwise classified:

None (a)

Safety Data Sheet

According to NOM- 018 -STPS 2015

SECTION III. COMPOSITION / INFORMATION ON INGREDIENTS

III.1 Chemical Name: *Polyethylene glycol 8000*

III.2 No. CAS: *25322-68-3*

III.3 Composition

Chemical substances	%	No. CAS	No. ONU
Polyethylene glycol	*100*	*25322-68-3*	*NR*

SECTION IV. FIRST-AID MEASURES

IV.1 Emergency in case of:

Ingestion: *Can cause abdominal pain, dizziness and vomit.*

Inhalation: *Move the to a ventilated area.*
If the person is not breathing, give artificial respiration. If breathing is difficult, apply oxygen.
Get immediate medical attention.

Contact: *Prolonged exposure can cause skin irritation.*

IV.2 First aid in case of:

Ingestion: *Give 2 glasses of water and induce vomit .*
Never give anything through the mouth to an unconscious person.
Get medical attention.

Inhalation: *Move the person to a ventilated area.*
If the person if not breathing, give artificial respiration. If breathing is difficult, apply oxygen.

Wash with water for ten minutes to remove the remaining material.

Contact:

SECTION V. FIRE-FIGHTING MEASURES

V.1 Means of extinction:

Water:	*x*	**Chemical powder:**	*x*
Foam:	*x*	**Other media:**	-
CO2:	*x*		

V.2 Specific personal protection equipment to be used for firefighting:

Use autonomous equipment (SCBA) and complete firefighter equipment.

V.3 Special procedure and precautions during firefighting:

Keep away from ignition sources.
Avoid material inhalation or products of its combustion.
Use water spray, fog or foam.

V.4 Risk conditions for an unusual fire

In case of fire, formation of toxic combustion gases is possible.

V.5 Hazardous combustion products

In case of fire, CO and CO2 are realesed.

SECTION VI. ACCIDENTAL RELEASE MEASURES

VI.1 Immediate Procedure and Precautions

Contain leakage using appropriate protective equipment. Collect with absorbent material, place material in a suitable container for disposal.

Safety Data Sheet

According to NOM- 018 -STPS 2015

VI.2 Mitigation Method

Use inert material to contain the leak or spill.

SECTION VII. HANDLING AND STORAGE

VII.1 During handling:

Avoid contact with eyes and skin.
Smoking should be prohibited in storage areas and during its use.

VII.2 During storage:

Store in a dry, well-ventilated area away from flame, heat, or other ignition sources.

SECTION VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

VIII.1 Specific personal protection equipment - Hand Protection

Butyl, Neoprene or PVC gloves.

VIII.2 Specific personal protection equipment - Eyes Protection

Safety glasses.

Safety Data Sheet

According to NOM- 018 -STPS 2015

VIII.3 Specific personal protection equipment - Other Protection

Protective clothing to minimize skin contact and chemical resistant shoes should be used.

SECTION IX. PHYSICAL AND CHEMICAL PROPERTIES

IX.1 Boiling Point, ° C	*>200*	**IX.9 Relative density @ 15 ° C**	*min. 1.1*
IX.2 Melting Point, ° C	*55 - 62*	**IX.10 pH**	*5 - 7*
IX.3 Flash Point, ° C	*>250*	**IX.11 Molecular weight, g/gmo**	*7000 - 9000*
IX.4 Auto ignition temperature, ° C	*>360*	**IX.12 Physical state, 25°C**	*Solid*
IX.5 Evaporation speed	*ND*	**IX.13 Color**	*White*
IX.6 Solubility in water	*Soluble*	**IX.14 Odor**	*Characteristic*
IX.7 Vapour pressure @ 25 ° C	*<0.1*	**IX.15 Ignition limits**	*ND*
IX.8 Volatility percentage (21 ° C)	*ND*	**IX.16 Other data**	*Hygroscopic*

SECTION X. STABILITY AND REACTIVITY

X.1 Stability

Stable.

X.2 Incompatibility

Oxidants.

X.3 Hazardous decomposition products

When heated to decomposition, carbon monoxide and carbon dioxide are produced.

X.4 Spontaneous polymerization

Will not occur.

X.5 Other conditions to ensure during the use of the chemical to prevent it from suddenly reacting

Heavy oxidants.

SECTION XI. TOXICOLOGICAL INFORMATION

XI.1 Acute toxicity

LD50 Oral - Rat - 30,000 mg/kg
Inhalation: No data available
LD50 Dermal - Rabbit - > 20,000 mg/kg

XI.2 Skin corrosion / irritation

Skin - Rabbit
Result: No skin irritation - 4 h

Safety Data Sheet

According to NOM- 018 -STPS 2015

XI.3 Eye irritation

Eyes - Rabbit
Result: Mild eye irritation

XI.4 Sensitization

Non-sensitizing

XI.5 Germ cell mutagenicity / carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA

SECTION XII. ECOLOGICAL INFORMATION

XII.1 Biodegradation: *80 % (28 d)*
readily degradable
Method: OECD 301 E

XII.2 Fish toxicity: *LC50 > 10 g/l (48 h, golden orfe)*
Method: DIN 38412 T.15

Safety Data Sheet

According to NOM- 018 -STPS 2015

SECTION XIII. DISPOSAL CONSIDERATIONS

XIII.1 Waste disposal information

Recommended disposal is by incineration or landfill approved.

All waste must be handled in accordance with local, state and federal regulations. Legislation addressing waste disposal requirements may differ by country, state and/ or territory.

SECTION XIV. TRANSPORT INFORMATION

XIV.1 DOT

Not restricted

XIV.2 IMDG

Not restricted

XIV.3 IATA

Not restricted

XIV.4 No. UN *NR*

SECTION XV. REGULATORY INFORMATION

TSCA: All the components of this product are cataloged in the Inventory.

SARA (section 311/312):

REACTION HAZARD: No
Pressure Hazard: No
Fire hazard: No
Immediate / acute: No
Delayed / chronic: No

SARA 313: This product does not contain any toxic chemicals listed in Section 313 of the 1986 Emergency Planning and Right to Know Act.

Clean Water Law: Contains no known priority pollutants at concentrations greater than 0.1%.

Volatile VOC organic compounds: Remark: Not available

NFPA:

Beta grupo petroquímico

Safety Data Sheet

According to NOM- 018 -STPS 2015

SECTION XVI. OTHER INFORMATION

XVI.1 Bibliography:

PERRY, Chemical Engineer's Handbook, Sixth Edition, Edit. Mc. Graw Hill.

NOM-018-STPS-2015, System for the identification and communication of hazards and risks from hazardous chemicals in the workplace.

GRE 2016 (Emergency reponse guide).

CARRIAGE OF DANGEROUS GOODS, INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE, ANNEXES AND SUPPLEMENTS, Revised Emergency Response Procedures for Ships Carrying , Dangerous Goods (EmS Guide) , Ref. T3/1.01.

NFPA 704, Standard for identifying the risks of material for emergency response system.

FEDEX Dangerous Goods Help Guide 2014.

Dangerous Goods Regulations of the IATA, 52a Edición.

http://www.sigmaaldrich.com/safety-center.html

http://www.avantormaterials.com/search.aspx?searchtype=msds

http://www.merckmillipore.com/MX/es/documents/Z.qb.qB.tecAAAFDDJUsznLq.nav?CategoryName=010814123202&CategoryDomainName=Merck-content_catalog

IMDG Code - International Maritime Dangerous Goods.

SGA - GSA (Globally Harmonidez System).

Regulation for land transport of hazardous materials and wastes.

NMX-R-019-SCFI-2011 Harmonized classification and hazard communication of chemicals.

XVI.2 Issuing date: *21/07/2009*

XVI.3 Update: *16/04/2020*

XVI.4 Control changes:

Version 7 - Modification of the format and the information contained, according to the guidelines of the NOM-018-STPS 2015

NA: Not Applicable ND: Not Determined NR: Not Registered or Not Regulated

The information contained in this Safety Data Sheet has been obtained from reliable sources, however,there is no express or implied warranty as to its accuracy or correctness.
The opinions expressed herein are those of qualified professionals, the information given is currently known on the subject. The use of this information and of the product is outside the control of the supplier, Fabricante y Comercializadora Beta SA de CV who assumes no responsibility. The user is obliged to determine the conditions of safe use of the product.

SDS
Borresperse CA – powder

Safety Data Sheet

BORRESPERSE CA - POWDER

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name: BORRESPERSE CA - POWDER

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

Recommended uses: Binder
Dispersing agent

1.3. Details of the supplier of the safety data sheet

Supplier

Company:	Borregaard USA, Inc
Address:	100 Grand Avenue Rothschild, WI 54474-1198
Country:	UNITED STATES OF AMERICA
E-mail:	customer.bus@borregaard.com
Phone:	+1(715)359-6544
Fax:	+1(715)355-3648

1.4. Emergency Telephone Number

+1(715)359-6544 (Emergency phone)
+1(800)424-9300 (Chemtrec phone) (24h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

HazCom classification: The product shall not be classified as hazardous according to the classification and labeling rules for substance and mixtures.

HazCom classification - other information: The product does not have to be classified.

2.2. Label elements

The product shall not be classified as hazardous according to the classification and labeling rules for substance and mixtures.

2.3. Other hazards

Nuisance dust.
OSHA Hazard Category: Combustible Dust. Warning. May form combustible dust concentrations in air.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Substance	CAS No	Concentration	Notes
Calcium lignosulfonate	8061-52-7	≥ 92%	
Water	7732-18-5	≤ 8%	

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation: Seek fresh air.

Ingestion: Wash out mouth thoroughly and drink 1-2 glasses of water in small sips.

Skin contact: Wash the skin with water. Remove contaminated clothing.

Eye contact: Flush with water (preferably using eye wash equipment) until irritation subsides. Seek medical advice if symptoms persist.

4.2. Most important symptoms and effects, both acute and delayed

Nuisance dust.

4.3. Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Extinguish with powder, foam, carbon dioxide or water mist.

Unsuitable extinguishing media: Do not use a jet of water, as it may spread the fire.

5.2. Special hazards arising from the substance or mixture

Note the risk of dust explosion.

5.3. Advice for firefighters

Wear Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Avoid formation of dust. Provide good ventilation.

6.2. Environmental precautions

Avoid unnecessary release to the environment. Prevent spillage from entering drains and/or surface water.

6.3. Methods and material for containment and cleaning up

Sweep up/collect spills for possible reuse or transfer to suitable waste containers.

6.4. Reference to other sections

See section 8 for type of protective equipment.
See section 13 for instructions on disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Work under effective process ventilation (e.g. local exhaust ventilation).

7.2. Conditions for safe storage, including any incompatibilities

Store in a dry, cool, well-ventilated area. Avoid accumulation of dust.

7.3. Specific end use(s)

SECTION 8: Exposure controls/personal protection

Occupational exposure limit

Substance name	Time period	ppm	mg/m³	fiber/cm3	Comments	Remarks
Nuisance dust (OSHA PELV)	OSHA		15		(total) and 5 mg/m3 respirable	

Biological threshold values: Avoid formation of dust.

8.2. Exposure controls

Appropriate engineering controls: Provide good ventilation.

Personal protective equipment, eye/face protection: Wear safety goggles if there is a risk of dust contact with eyes.

Personal protective equipment, skin protection: In the event of direct skin contact, wear protective gloves:

Personal protective equipment, respiratory protection: Wear respiratory protective equipment with P2 filter when performing dusty work. NIOSH approved dust mask recommended.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Parameter	Value/unit
State	Powder
Colour	Brown
Odour	Mild
Solubility	Water soluble.
Explosive properties	No data
Oxidising properties	No data

Parameter	Value/unit	Remarks
pH (solution for use)	3.5 - 5.5	
pH (concentrate)		Not applicable.
Melting point	°C	Not applicable.
Freezing point	°C	Not applicable.
Initial boiling point and boiling range	°C	Not applicable.
Flash Point	°C	Not applicable.
Evaporation rate		Not applicable.
Flammability (solid, gas)		Not applicable.
Flammability limits		Not applicable.
Explosion limits	vol%	LEL: 0.2 oz./cu.ft. UEL: 3.5 oz./cu.ft.
Vapour pressure	kPa	Not applicable.
Vapour density		Not applicable.
Relative density		Not applicable.
Partition coefficient n-octonol/water		100% Water.
Auto-ignition temperature	> 400 °C	
Decomposition temperature	> 200 °C	
Viscosity	cSt	Not applicable.
Odour threshold	ppm	Not applicable.

9.2. Other information

Parameter	Value/unit	Remarks
Density	0.37 - 0.56 g/ml (bulk density)	
Combustible Dust Characteristics		MIE: 1130 mJoule; Kst: St1 (0-200 bar*m/s); Part size: 100% < 150 micron.

SECTION 10: Stability and reactivity

10.1. Reactivity

Not reactive.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Avoid formation of dust. Avoid spark due to static electricity.

10.5. Incompatible materials

Strong oxidisers.

10.6. Hazardous decomposition products

Typical combustion products.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity - oral

Calcium lignosulfonate, cas-no 8061-52-7

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 5000mg/kg			

Based on existing data, the classification criteria are deemed not to have been met.

Acute toxicity - inhalation: The product does not have to be classified.

Skin corrosion/irritation

Calcium lignosulfonate, cas-no 8061-52-7

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit				Non-irritating	OECD 404	

The product does not have to be classified.

Serious eye damage/eye irritation

Calcium lignosulfonate, cas-no 8061-52-7

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit				Non-irritating	OECD 405	

The product does not have to be classified.

Respiratory sensitisation or skin sensitisation: None known.

Germ cell mutagenicity: None known.

Carcinogenic properties: The product does not have to be classified.

Other toxicological effects

Calcium lignosulfonate, cas-no 8061-52-7

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Mouse				Non-sensitising	OECD 429	

Sensitization to Material: May cause allergic reaction in rare cases.

SECTION 12: Ecological information

12.1. Toxicity

Calcium lignosulfonate, cas-no 8061-52-7

Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
Fish	Brachydanio rerio	96h	EC50	> 1000mg/l			Similar product
Algae	Scenedesmus subspicatus	24, 48, 72h	EC50	> 600mg/l			Similar product
Crustacea	Daphnia magna	24, 48h	EC50	> 1000mg/l			Similar product

No effect on the environment. Based on existing data, the classification criteria are deemed not to have been met.

12.2. Persistence and degradability

Partially biodegradable. COD: 3300 mg 02/L (0.25% solution)

12.3. Bioaccumulative potential

No bioaccumulation expected.

12.4. Mobility in soil

Solubility in water: Completely miscible

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Dispose of in accordance with Local Authority requirements.

SECTION 14: Transport information

14.1. UN number or ID number: Not applicable.

14.2. UN proper shipping name: Not applicable.

14.3. Transport hazard class(es): Not applicable.

14.4. Packing group: Not applicable.

14.5. Environmental hazards: Not applicable.

14.6. Special precautions for user

None

Not applicable.

Other Information: DOT Class 55 Lignin Pitch - Harmonized Tariff Code for US:3804.00.1000-0

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Special Provisions: ADR/RID (2017), GHS / CLP (EC NO1272/2008) GHS USA June, 2015.

Authorisations / limitations: Global Inv. Status:
Global Inv. - Australia: On AICS Australian Inv. of Chemical Substances, June 1996 Ed
Global Inv. - Canada: On DSL Supplement to Canada Gazette, Part I, January 26, 1991
Global Inv. - China: On IECSC Inventory of Existing Chemical Substances in China, 2013
Global Inv. - Europe - Exempt from REACH registration according to Article 2(9). Modifying agents of the chemically modified polymer has been registered.
Global Inv. - Japan: On ENCS Unlisted chemical name. For ENCS chemical class or category name, refer to ENCS No. 8-209.
Global Inv. - Mexico: On INSQ National Inventory of Chemical Substances in Mexico, 2012
Global Inv. - New Zealand: On NZIoC New Zealand Inventory of Chemicals, 2006 May be used as a single component chemical under an appropriate group standard.
Global Inv. - Philippines: On PICCS Philippines Inventory of Chemicals and Chemical Substances, 2000
Global Inv. - South Korea: On ECL Korean Existing Chemicals List, January 1997, ECL Serial No.: KE-04572
Global Inv. - Switzerland: On SWISS Giftliste 1 (List of Toxic Substances 1), 31 May 1999, SWISS No.: G-44534
Global Inv. - USA: On the Active Status TSCA Inventory June 2020 TSCA Inventory Commercial Status: Active. EPA Flags: XU Exempt from Chemical Data Reporting

NFPA ratings

Health hazard: 1

Flammability: 1

Instability: 0

15.2. Chemical Safety Assessment

Other Information: The product does not have to be classified.

SECTION 16: Other information

Other Information: Government regulations for use of this product are summarized below (USA):
21 CFR 175.105 - Adhesives
21 CFR 176.170; 176.180; 176.200; 178.3120 - Paper and paperboard components
21 CFR 176.210 - Defoamers
21 CFR 177.1210 - Polymers - sodium lignosulfonate
21 CFR 573.600 - Food additives permited in feed and drinking water of animials.
21 CFR 582.99 - Substances generally recognized as safe; adjuvants for pesticide chemicals
40 CFR 180.910; 180.930; 180.1001; 21 CFR 182.99 - Exemptions from the requirement of a tolerance: Inert ingredients used pre- and post-harvest; or applied to animals; or adjuvants for pesticide chemicals

Vendor notes: Information given in this safety data sheet is in accordance with our information, and to the best of our knowledge, was correct on the last revision date. Information given is intended to present guidelines for safe handling, use, processing, storage, transport, disposal and discharge; it is not intended to be a guarantee or quality specification. It is the responsibility of the recipient of this safety data sheet to ensure that information given here is read and

understood by all who use, handle, dispose of or in any way come in contact with the product.

Revision date: 2/25/2021

Document language: US

SDS
Budenheim FFB 129

SAFETY DATA SHEET

FFB 129

Version 1.0 | Revision Date 06/07/2016 | Print Date 01/24/2017

1. IDENTIFICATION

Product identifier

Product name / Trade name : FFB 129

Recommended use of the chemical and restrictions on use

Recommended use : Raw material for industry

Manufacturer or supplier's details

Company : Budenheim USA, Inc.

Address : Westbrooke Drive 2219
Columbus OH 43228
US

Telephone : (614) 345-2400

Additional information available from: : www.budenheim.com

Prepared by / E-mail address of person responsible for the SDS : ProductStewardship@budenheim.com

Emergency telephone : GBK/Infotrac ID 105981: (USA domestic) 1 800 535 5053 or international (001) 353 323 3500

2. HAZARDS IDENTIFICATION

GHS Classification

Corrosive to Metals : Category 1

Skin corrosion : Category 1B

Serious eye damage : Category 1

Specific target organ systemic toxicity - repeated exposure : Category 2

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements : **Prevention:**
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

Other hazards

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Aqueous solution

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Phosphoric acid	7664-38-2	>= 50 - < 70
Phosphoric acid, aluminum salt (3:1)	13530-50-2	>= 10 - < 20
1,2-Ethanediol	107-21-1	>= 1 - < 3

4. FIRST AID MEASURES

Description of first-aid measures

General advice : Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance. Do not leave the victim unattended.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Protect unharmed eye. Keep eye wide open while rinsing. Continue rinsing eyes during transport to hospital. If eye irritation persists, consult a specialist.

In case of skin contact : Take off contaminated clothing and shoes immediately. Wash off with plenty of water. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. Take victim immediately to hospital.

If inhaled : If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.

If swallowed : Do NOT induce vomiting. Rinse mouth with water. Never give

anything by mouth to an unconscious person. Take victim immediately to hospital. Induce vomiting immediately and call a physician.

Most important symptoms and effects, both acute and delayed

Risks : Causes serious eye damage.
May cause damage to organs through prolonged or repeated exposure.
Causes severe burns.

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

Treatment : For specialist advice physicians should contact the Poisons Information Service.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards arising from the chemical

Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire. Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

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. In the event of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.

Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.

Methods and materials for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Avoid formation of respirable particles. Avoid exceeding the given occupational exposure limits (see section 8). Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
Hygiene measures	:	Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Store in original container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep tightly closed. Keep in a dry, cool and well-ventilated place.
Advice on common storage	:	No special restrictions on storage with other products.
Storage stability	:	Stable under recommended storage conditions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Phosphoric acid	7664-38-2	TWA	1 mg/m3	ACGIH
		STEL	3 mg/m3	ACGIH
		TWA	1 mg/m3	NIOSH REL
		ST	3 mg/m3	NIOSH REL
		TWA	1 mg/m3	OSHA Z-1
		TWA	1 mg/m3	OSHA P0
		STEL	3 mg/m3	OSHA P0
		PEL	1 mg/m3	CAL PEL
		STEL	3 mg/m3	CAL PEL
Phosphoric acid, aluminum salt (3:1)	13530-50-2	TWA	2 mg/m3 (Aluminum)	OSHA P0
		TWA	2 mg/m3 (Aluminum)	NIOSH REL
		PEL	2 mg/m3 (Aluminum)	CAL PEL
1,2-Ethanediol	107-21-1	C	50 ppm 125 mg/m3	OSHA P0
		C (Aerosol only)	100 mg/m3	ACGIH
		C (Vapor)	40 ppm 100 mg/m3	CAL PEL

Personal protective equipment

Eye/face protection : Ensure that eyewash stations and safety showers are close to

the workstation location.

Hand protection

Remarks	:	Polyvinyl alcohol or nitrile- butyl-rubber gloves The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Skin protection	:	Impervious clothing
Respiratory protection	:	No personal respiratory protective equipment normally required.
Protective measures	:	Avoid contact with skin. When using do not eat, drink or smoke.
Hygiene measures	:	Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (Form)	:	liquid
Color	:	colorless
Odor	:	odorless
pH (10 g/l, 20 °C)	:	ca. 1.8
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	Not applicable
Flammability (liquids)	:	does not ignite
Water solubility	:	completely miscible
Density (20 °C, 1,013 hPa)	:	ca. 1.54 g/cm3
Explosive properties	:	Regulatory information: Not explosive International transport regulations: Not explosive
Corrosive to Metals	:	Corrosive to metals

10. STABILITY AND REACTIVITY

Reactivity

Reactivity	:	No dangerous reaction known under conditions of normal use.

Chemical stability

Chemical stability	:	The product is chemically stable.

Possibility of hazardous reactions

Possibility of hazardous reactions : Stable under recommended storage conditions.

No dangerous reaction known under conditions of normal use.

Conditions to avoid

Conditions to avoid : No data available

Incompatible materials

Materials to avoid : None known.

Hazardous decomposition products

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: 3,138 mg/kg
Calculation method

Acute dermal toxicity : Acute toxicity estimate : > 5,000 mg/kg
Calculation method

Ingredients:

Phosphoric acid:

Acute oral toxicity : LD50 (Rat, female): ca. 2,600 mg/kg
OECD Test Guideline 423, GLP: no

Acute dermal toxicity : LD50 (Rabbit): 2,740 mg/kg

Phosphoric acid, aluminum salt (3:1):

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg
OECD Test Guideline 420, GLP: yes

Acute dermal toxicity : LD50 (Rabbit): > 4,640 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

1,2-Ethanediol:

Acute oral toxicity : LD50 (Rat, male and female): 7,712 mg/kg

LD50 (Cat): 1,670 mg/kg

Acute inhalation toxicity : LC50 (6 h, Rat, male and female): > 2.5 mg/l (dust/mist)

Acute dermal toxicity : LD50 (Mouse, male and female): > 3,500 mg/kg

Skin corrosion/irritation

Causes severe burns.

Ingredients:

Phosphoric acid:

: Corrosive after 3 minutes to 1 hour of exposure

Phosphoric acid, aluminum salt (3:1):

reconstructed human epidermis (RhE) : No skin irritation
EPISKIN Human Skin Model Test, GLP: yes

reconstructed human epidermis (RhE) No skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Ingredients:

Phosphoric acid:

: Irreversible effects on the eye

Phosphoric acid, aluminum salt (3:1):

: Irreversible effects on the eye
OECD Test Guideline 437, GLP: yes

Respiratory or skin sensitization

Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.

Ingredients:

Phosphoric acid, aluminum salt (3:1):

Mouse : Does not cause skin sensitization. Test Type: Maximization Test
OECD Test Guideline 429, GLP: yes

Carcinogenicity

Not classified based on available information.

IARC : No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA : No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP : No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

Phosphoric acid:

Genotoxicity in vitro : negative (Ames test)
OECD Test Guideline 471 , GLP: yes

negative (In vitro mammalian cell gene mutation test)
OECD Test Guideline 476 , GLP: yes

negative (Chromosome aberration test in vitro)
OECD Test Guideline 473 , GLP: yes

Phosphoric acid, aluminum salt (3:1):

Genotoxicity in vitro : negative (Ames test , Metabolic activation)
OECD Test Guideline 471 , GLP: yes
In vitro tests did not show mutagenic effects

1,2-Ethanediol:

Genotoxicity in vitro : negative (Ames test)

Reproductive toxicity

Not classified based on available information.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Ingredients:

1,2-Ethanediol:

Target Organs: Kidney
Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Aspiration toxicity

Not classified based on available information.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Phosphoric acid:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea), 48 h): > 100 mg/l
OECD Test Guideline 202

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae), 72 h): > 100 mg/l
OECD Test Guideline 201

NOEC (Desmodesmus subspicatus (green algae), 72 h): 100 mg/l
OECD Test Guideline 201

Phosphoric acid, aluminum salt (3:1):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout), 96 h): > 100 mg/l
OECD Test Guideline 203

NOEC (Oncorhynchus mykiss (rainbow trout), 96 h): 100 mg/l
OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea), 48 h): > 100 mg/l
OECD Test Guideline 202

1,2-Ethanediol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout), 96 h): > 18,500 mg/l

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea), 24 h): 74,000 mg/l

Toxicity to bacteria : EC50 (Pseudomonas putida, 16 h): > 10,000 mg/l

Persistence and degradability

Ingredients:

Phosphoric acid, aluminum salt (3:1):

Biodegradability : The methods for determining the biological degradability are not applicable to inorganic substances.

1,2-Ethanediol:

Biodegradability : Biodegradation: 83 - 96 %
Exposure time: 14 d
Result: Readily biodegradable.
OECD Test Guideline 301C

Bioaccumulative potential

Ingredients:

Phosphoric acid, aluminum salt (3:1):

Partition coefficient: n-octanol/water : Not applicable

1,2-Ethanediol:

Bioaccumulation : No bioaccumulation is to be expected (log Pow <= 4).

Mobility in soil

No data available

Results of PBT and vPvB assessment

Not relevant

Other adverse effects

Product:

Hazardous to the ozone layer

Ozone-Depletion Potential : 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
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).

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues (Product)	:	Do not contaminate ponds, waterways or ditches with chemical or used container. Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product.

14. TRANSPORT INFORMATION

International Regulation

UNRTDG

UN number	:	UN 1805
Proper shipping name	:	PHOSPHORIC ACID, SOLUTION
Class	:	8
Packing group	:	III
Labels	:	8

IATA-DGR

UN/ID No.	:	UN 1805
Proper shipping name	:	Phosphoric acid, solution
Class	:	8
Packing group	:	III
Labels	:	Corrosives
Packing instruction (cargo aircraft)	:	856
Packing instruction (passenger aircraft)	:	852

IMDG-Code

UN number	:	UN 1805
Proper shipping name	:	PHOSPHORIC ACID SOLUTION
Class	:	8
Packing group	:	III
Labels	:	8
EmS Code	:	F-A, S-B
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 1805
Proper shipping name	:	PHOSPHORIC ACID SOLUTION
Class	:	8
Packing group	:	III

Labels	:	CORROSIVE
ERG Code	:	154
Marine pollutant	:	no

15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Component RQ (lbs)
Phosphoric acid	7664-38-2	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

1,2-Ethanediol	107-21-1	2 %

Clean Air Act

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).
The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

1,2-Ethanediol	107-21-1

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).
The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

1,2-Ethanediol	107-21-1

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Phosphoric acid	7664-38-2

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Phosphoric acid	7664-38-2

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

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

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

16. OTHER INFORMATION

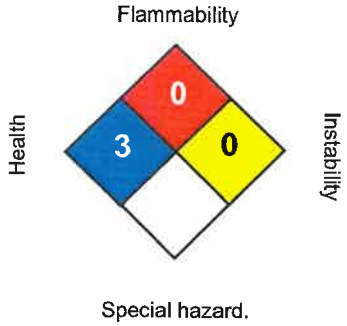
Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Cooperation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Revision Date	:	06/07/2016
Date format	:	mm/dd/yyyy
Date of last issue	:	-
Date of first issue	:	06/07/2016

NFPA:



HMIS III:

HEALTH	3 *
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SDS
Natural Gas

1. Product and Company Identification

Product Name:	Natural Gas (with and without the addition of an odorant)
Synonyms:	Methane; NG, CNG when compressed
UN Number:	1971
Recommended Use:	Fuel Gas
Supplier Address:	Dominion Energy Utah Dominion Energy Wyoming Dominion Energy Idaho Dominion Energy Questar Pipeline Dominion Energy Wexpro 333 South State Street P.O. Box 45433 Salt Lake City, UT 84145-0433 801-324-5111
Chemical Emergency Phone No.:	801-324-5111

2. Hazards Identification

EMERGENCY OVERVIEW

DANGER!

EXTREMELY FLAMMABLE GAS – FIRE AND EXPLOSION HAZARD

Potential Health Effects

Primary Route of Exposure:	Inhalation
Inhalation:	Exposure to low concentrations by inhalation is considered to be non-toxic. At higher concentrations may displace oxygen in the air resulting in central nervous system depression similar to asphyxiation. Symptoms include headache, dizziness, nausea, fatigue, loss of consciousness and death.
Eye Contact:	Not irritating under most circumstances.
Skin Contact:	Not irritating under most circumstances. Not thought to be a hazard through skin contact.
Ingestion:	Not an expected route of exposure.
Chronic Effects:	No known systemic effects.
Aggravated Medical Conditions:	Respiratory disorders.
Other Hazards:	Improperly adjusted appliances could result in natural gas not being burned completely, which may produce excess carbon monoxide. Under certain conditions, especially without proper ventilation, carbon monoxide could be released into an occupied area. Carbon monoxide is an invisible, odorless gas that is poisonous and may cause serious injury or, in extreme cases, even death. Symptoms include severe headache, nausea, vomiting and weakness.

3. Composition/Information on Ingredients

CHEMICAL	CAS NO.	VOLUME %
Methane	74-82-8	90.78 – 99.11
Ethane	74-84-0	0.26 – 5.18
Propane	74-98-6	0.16 – 1.59
Butanes (*n-, & iso-*)	106-97-8; 78-28-5	0.007 – 1.2
Nitrogen	7727-37-9	0.19 – 1.53
Carbon dioxide	124-38-9	0 – 2.02

4. First-aid Measures

Inhalation:	If victim is unconscious, do not attempt rescue unless properly equipped with the necessary personal protective equipment. Remove victim to fresh air. Quickly restore and/or support breathing as required. (Begin CPR immediately for victim if breathing has stopped due to natural gas asphyxiation.) Obtain medical assistance.
Eye Contact:	In the case of eye contact, rinse the eye with plenty of running water. Obtain medical assistance.
Skin Contact:	Wash skin with plenty of running water. Obtain medical assistance if irritation persists.

5. Fire-fighting Measurements

Flammable Properties:	Extremely flammable gas
Suitable Extinguishing Media:	Flame can be extinguished with dry chemical or CO_2.
Explosion Hazards:	Natural gas readily forms flammable/explosive mixtures with air. Violent or explosive reactions can occur between natural gas and strong oxidizing agents (refer to Section 10.).
Hazardous Combustion Products:	Carbon dioxide and carbon monoxide.
Special PPE & Precautions for Fire-fighters:	**Re-ignition or explosion hazards exist if flame is extinguished without stopping the flow of gas and/or cooling the surroundings and eliminating the ignition source**. Use water spray to cool surroundings. Wear approved respiratory equipment and full protective equipment as indicated for fighting fire.

6. Accidental Release Measures

Personal Precautions:	Shut off gas supply. Extinguish all open flames, prohibit smoking, and make certain that electrical switches or other possible sources of ignition are not operated. If indoors ventilate by opening doors and windows. Evacuate and clear a safe area. Wear self-contained breathing apparatus where warranted.
Environmental Precautions:	May use water spray to cool surroundings.

Methods for Containment:	Stop the flow of gas. If release is from a cylinder or container, move the container outdoors if safe to do so, or evacuate if cylinder cannot be moved.
Methods for Cleanup:	Natural gas is lighter than air unless trapped, and will rise and dissipate rapidly into the atmosphere.
Important Information About Odorant Fade:	**Natural gas transported in distribution pipelines including compressed natural gas fueling facilities has been treated with the addition of an odorant which is intended to allow people to detect the presence of natural gas at approximately 0.5 to 1 % in the air. However, many factors may decrease the ability to detect the presence of leaking gas through smell alone. Some examples include: lack of sense of smell, impaired sense of smell due to allergies, colds, tobacco use, or odor fatigue. Other conditions may cause the loss of odorant resulting in "odor fade" in natural gas transported in distribution pipelines. Odor fade can occur in installations of new pipe, especially in larger diameter pipe. Also, certain types of soil may cause odor fade. Where an underground leak of natural gas is suspected, do not rely on sense of smell alone. Other indications include discolored or dead vegetation over or near installed pipes. If a leak is suspected, immediately contact the emergency number listed in Section 1.**

7. Handling and Storage

Safe Handling:	Ground and bond all lines, containers and equipment used with natural gas to prevent static sparks. Use non-sparking tools. Keep away from flame, sparks and excessive temperatures. Store only in approved containers or cylinders, use in well-ventilated areas. See also applicable OSHA regulations for the handling and storage of compressed gases which includes, but is not limited to, 29 CFR 1910.101.
Safe Storage:	Store in cool, well-ventilated areas, preferably outdoors. Use explosion proof electrical systems and equipment where required by applicable codes. Store apart from strong oxidizers. When stored in cylinders, cylinders should be in an upright position with the valve protection cap in place, secured to prevent tip-over or falling.

8. Exposure Controls/Personal Protection

CHEMICAL	OCCUPATIONAL EXPOSURE LIMITS		
	OSHA	ACGIH	NIOSH
Methane	Not applicable	1000 ppm[1]	Not applicable
Ethane	Not applicable	1000 ppm[1]	Not applicable
Propane	1000 ppm	1000 ppm[1]	1000 ppm TWA 2100 ppm IDLH
Butanes (*n-, & iso-*)	Not applicable	1000 ppm[2]	800 ppm[3] TWA
Nitrogen	Not applicable	Simple asphyxiant	N/A
Carbon dioxide	5000 ppm	5000 ppm TWA 30,000 ppm STEL	5000 ppm TWA 30,000 ppm STEL

[1]As an aliphatic hydrocarbon gas (C_1 to C_4)
[2]Applies to n-Butane as an aliphatic hydrocarbon gas

[3]A NIOSH REL of 800 ppm as a time weighted average exposure has been established for both butanes listed.

Personal Protective Measures and Controls:

Eye Protection:	Safety glasses or face shields when working with pressurized gas lines or cylinders.
Skin and Body protection:	Work gloves and steel-toed shoes are recommended for handling cylinders. Where expanding gas may be generated, insulated gloves are recommended. Where appropriate, wear personal protective equipment including flame retardant clothing to protect against burns.
Respiratory Protection:	Use a NIOSH approved positive pressure air supply respirator equipped with an escape bottle, or a pressure demand self- contained breathing apparatus (SCBA) for uncontrolled escaping gas, where the concentration of gas is unknown, or where concentration exceeds the occupational exposure level.
Hearing Protection:	Ear plugs and/or muffs recommended for release of high pressure gas.
Engineering and Ventilation Controls:	Where applicable, adequate general or local exhaust ventilation should be used to maintain airborne concentrations below occupational exposure levels, to prevent the formation of explosive atmospheric concentrations, and to prevent the displacement of oxygen in confined areas.

9. Physical and Chemical Properties

Appearance & Odor:	Pipeline natural gas is colorless, odorless gas. The addition of an odorizing agent to distribution pipelines makes leaking gas detectable at 0.5 to 1 % gas in air. The odor is similar to the smell of skunk.
Boiling Point:	~ 100º F (~38º C)
Flash Point:	Not applicable.
Evaporation Rate:	Not applicable.
Flammability Limits in Air:	LEL = 5.0 % UEL = 15.0 %
Vapor Density:	0.610 to 0.690
Solubility in Water:	3×10^{-5} lb./lb.
Percent Volatile by Volume:	100 %
Vapor Pressure:	Not applicable.
Autoignition Temperature	1100º F to 1200º F (590º C - 650º C)

10. Stability and Reactivity

Stability:	Stable under normal storage and handling conditions.
Conditions to Avoid and Incompatible Products:	Readily forms flammable or explosive mixtures with air. Keep away from ignition sources and strong oxidizers, especially chlorine, bromine pentafluoride, oxygen difluoride, nitrogen difluoride and chlorine dioxide.
Hazardous Decomposition Products:	Incomplete combustion may release carbon monoxide, carbon dioxide and smoke (non-combusted hydrocarbons).
Hazardous Polymerization:	None.

11. Toxicological Information

Acute Toxicity:	No data available.
Chronic Toxicity:	No data available.

12. Ecological Information

No data available.	Natural gas is lighter than air and will normally dissipate quickly into the atmosphere unless obstructed.

13. Disposal Considerations

Waste Classification:	If disposed of in a container, may be defined as a RCRA hazardous waste by the characteristic, “ignitability” (D001). All disposal activities must comply with federal, state, and local regulations.

14. Transport Information

Natural gas is primarily delivered by pipeline transmission and distribution lines, when transported in a container or cylinder, the following applies:

UN Number:	UN1971
UN Proper Shipping Name:	UN1971, Natural gas, compressed, 2.1
Hazard Class:	2.1
DOT Shipping Label:	FLAMMABLE GAS
Emergency Response Guide Number:	115

15. Regulatory Information

United States Regulations:

CERCLA:	None	
SARA Title III, Section 311:	Acute:	No
	Chronic:	No
	Fire:	Yes
	Pressure:	Yes
	Reactive:	No

CAA:	Methane is subject to the reporting requirements of Section 112(r) with an RQ of 10,000 pounds

TSCA:	None
DOT:	49 CFR Parts 191-192
OSHA	29 CFR 1910.1200

16. Other Information

NFPA:	Health Hazard 1	Fire Hazard 4	Instability 0	Special Hazard ---
HMIS:	Health Hazard 1	Flammability 4	Physical Hazard 0	Personal Protection ---

Date of Issue: May 2013

Abbreviations and Acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
DOT	U.S. Department of Transportation
HMIS	Hazardous Materials Information System
IDLH	Immediately Dangerous to Life
NIOSH	National Institute of Occupational Safety and Health
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
ppm	parts per million
SARA	Superfund Amendments & Reauthorization Act
STEL	Short Term Exposure Limit (typically a 15-minute time weighted average)
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average (typically 8 hours)

Disclaimer: While proper care has been taken in the preparation of this Safety Data Sheet, this information is provided without warranty. Each individual utilizing this document should make an independent determination of the methods to be used to protect the public, workers and the environment.

SDS
Tech Cool® 3700C

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	TECH COOL® 3700C
Substance number	:	REL_76301
Chemical usage	:	Coolant.

Manufacturer or supplier's details

Company	:	Chemetall US, Inc.
Address	:	675 Central Avenue New Providence NJ 07974
Telephone	:	(800) 526-4473
Telefax	:	(908) 464-4658
Emergency telephone no	:	CHEMTREC - 800-424-9300, 1-703-527-3887 (International)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	liquid
Colour	yellow
Odour	Bland
Hazard Summary	Irritating to eyes. May cause skin irritation. Also harmful if swallowed.

GHS Classification

Serious eye damage : Category 1

GHS Label element

Hazard pictograms :

Signal word : Danger

Hazard statements : Causes serious eye damage.

Precautionary statements : **Prevention:**
Wear eye protection/ face protection.
Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue

rinsing. Immediately call a POISON CENTER or doctor/ physician.

Potential Health Effects

Inhalation : no

Skin : yes

Ingestion : yes

Aggravated Medical Condition : None known.

Carcinogenicity:

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture :

Hazardous components

Component	CAS-No.	Weight percent
Triethanolamine	102-71-6	10 - 20
Diglycolamine	929-06-6	5 - 10

Unidentified ingredients are considered not hazardous under Federal Hazard Communication Standard (29CFR 1910.1200).

Specific chemical identity of composition has been withheld as a trade secret.

Exact percentage of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

If inhaled : Remove person to fresh air. If signs/symptoms continue, get medical attention.

In case of skin contact : Flush skin with large amounts of water. If irritation develops

and persists, get medical attention.

In case of eye contact : Rinse immediately with plenty of water for at least 15 minutes.
Keep eye wide open while rinsing.
Seek medical advice.

If swallowed : Rinse mouth.
Drink plenty of water.
Obtain medical attention.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Further information : In the event of fire, cool tanks with water spray.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation.

Methods and materials for containment and cleaning up : Ventilate area.
Clean up with inert absorbant material.
Keep in suitable, closed containers for disposal.
Flush with plenty of water.

Additional advice : Never return spills in original containers for re-use.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Use only with adequate ventilation.

Conditions for safe storage : Keep containers dry and tightly closed to avoid moisture absorption and contamination.
Store indoors in a cool, well-ventilated place

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Triethanolamine	102-71-6	TWA	5.000000 mg/m3	ACGIH

Personal protective equipment

Respiratory protection	:	If the occupational exposure limits cannot be met, suitable respirator equipment shall be worn.
Hand protection Remarks	:	Impervious gloves
Eye protection	:	Chemical resistant goggles must be worn.
Skin and body protection	:	Rubber or plastic apron
Hygiene measures	:	Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. Wear suitable protective clothing. Wash hands before breaks and immediately after handling the product. Provide adequate ventilation. Do not inhale fumes. Keep away from food and drink.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	yellow
Odour	:	Bland
pH	:	8.7 - 9.3, Concentration: 100.00000 g/l
Freezing point	:	no data available
Boiling point/boiling range	:	no data available
Flash point	:	does not flash
Evaporation rate	:	(Water =1) Less than 1
Upper explosion limit	:	Not applicable.
Lower explosion limit	:	Not applicable.
Vapour pressure	:	26.7 hPa (21.1 °C)
Relative density	:	1.039 - 1.059
Bulk density	:	8.67 - 8.84 lb/gal
Solubility(ies)		
Water solubility	:	completely soluble
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	No data available
Thermal decomposition	:	No data available

Viscosity, dynamic	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	freezing Direct sources of heat.
Incompatible materials	:	Strong acids Strong oxidizing agents Avoid contact with Nitrous Acid
Hazardous decomposition products	:	Nitrogen Oxides Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate : > 5,000.000000 mg/kg Method: Calculation method

Components:

Triethanolamine:

Acute oral toxicity	:	LD50 mouse: 5,846.000000 mg/kg
		LD50 rabbit: 2,200.000000 mg/kg
		LD50 rat: 4,920.000000 mg/kg
Acute inhalation toxicity	:	Target Organs: Respiratory Tract, Liver, Blood, Urinary system, Cardio-vascular system
Acute dermal toxicity	:	LD50 rat: > 16,000.000000 mg/kg
		LD50 rabbit: > 20,000.000000 mg/kg

Diglycolamine:

Acute oral toxicity	:	LD50 mouse: 2,825.000000 mg/kg
		LD50 rat: 3,000.000000 mg/kg
Acute dermal toxicity	:	LD50 rabbit: > 3,000.000000 mg/kg

Skin corrosion/irritation

Components:

Diglycolamine:
Result: Severe skin irritation

Serious eye damage/eye irritation

Components:

Diglycolamine:
Result: Corrosive

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT - single exposure

no data available

STOT - repeated exposure

no data available

Aspiration toxicity

no data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

no data available

Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water	:	Remarks: no data available

Other adverse effects

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Refer to all federal, provincial, state and local regulation prior to disposition of container and unused contents by reuse,

recycle or disposal.

SECTION 14. TRANSPORT INFORMATION

International regulation

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

SECTION 15. REGULATORY INFORMATION

TSCA Status : All components of this material comply with US TSCA requirements.

OSHA Hazards : Severe skin irritant
WHMIS Classification : D2B: Toxic Material Causing Other Toxic Effects

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Massachusetts Right To Know

Triethanolamine	102-71-6
Diglycolamine	929-06-6

Pennsylvania Right To Know

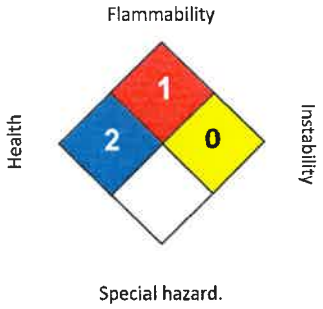
water	7732-18-5
Neodecanoic acid, DEA salt	58722-91-1
Triethanolamine	102-71-6
Diglycolamine	929-06-6
Triethanolamine salts of dibasic acids	68188-87-4

New Jersey Right To Know

water	7732-18-5
Neodecanoic acid, DEA salt	58722-91-1

Triethanolamine	102-71-6
Diglycolamine	929-06-6
Triethanolamine salts of dibasic acids	68188-87-4

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Safety Glasses, Gloves, Apron

SECTION 16. OTHER INFORMATION

Further information

Version *1.0*
Revision Date 05/18/2015

Chemetall US, Inc. warrants that the products described herein will conform with its published specifications.

The products supplied by Chemetall and information related to them are intended for use by buyers having necessary industrial skill and knowledge. Buyers should undertake sufficient verification and testing to determine the suitability of the Chemetall materials for their own particular purpose. Since buyer's conditions of use of products are beyond Chemetall's control, Chemetall does not warrant any recommendations and information for the use of such products. CHEMETALL DISCLAIMS ALL OTHER WARRANTIES INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE IN CONNECTION WITH THE USE OF ITS PRODUCTS.

ATTACHMENT I
EMISSION UNITS TABLE

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]
026	033	Kiln 26	1988/2020		Low temperature	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
EMISSION 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/m³**)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
033	Vertical	K-26	Kiln	None	None	None	None	CO	0.16800	0.02100	N/A	N/A	Gas	EE	11.212925
								CO2	240.000	30.000			Gas	EE	16018.4640
								NOx	0.00128	0.00016			Gas	EE	0.085432
								SO2	0.00120	0.00015			Gas	EE	0.080092
								PM Total	0.01520	0.00190			Gas	EE	1.014503
								PM 10	0.01140	0.00142			Gas	EE	0.760877
								PM 2.5	0.00380	0.00047			Gas	EE	0.253626
								TOC	0.02200	0.00275			Gas	EE	1.468359
								VOC	0.01100	0.00137			Gas	EE	0.734180
								Methane	0.00460	0.00057			Gas	EE	0.307021
								Formaldehyde	0.00015	0.00002			Gas	EE	0.010012
								Lead	0.000001	0.00000			Gas	EE	0.000067
								Polyethylene Glycol	1.833	0.110			Gas	EE	122.363267

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

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

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

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

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

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

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

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

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data								
Emission Point ID No. *(Must match Emission Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (°F)	Volumetric Flow [1] (acfm) *at operating conditions*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height [2] *(Release height of emissions above ground level)*	Northing	Easting
033	**2**	**1112° F**	**4000**	**21.2**	**1440**	**35**	**4317.444**	**565.4258**

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

ATTACHMENT L
EMISSIONS UNIT DATA SHEETS

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): K-26

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

   Existing TK & EC Shuttle Kiln

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

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

   Kiln is used for low termperature batch type drying - Maximum of 6,500 pounds per cycle with fumace firing time of approximately 25 hours per cycle = approximately 260 pounds per hour

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

   Depending on moisture content of product being dried total produced per cycle is approimately 5,980 pounds. The moisture removed is approximatley 520 lb per cycle. This results in dried product payload of 5,980 pounds per cycle or hourly production rate of 238 lb/hr

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

   None

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

6. Combustion Data (if applicable):

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

natural gas at a maximum rate of 2 million BTu/hr heat input (2,000 cubic feet per hour)

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

Na

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

@ °F and psia.

(d) Percent excess air:

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

5 burners each is 0.75 million btu/hr heat input, with total burner heat input for drying at 2 million but/hr

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

NA

(g) Proposed maximum design heat input: 2 × 10^6 BTU/hr.

7. Projected operating schedule:

Hours/Day	24 (heating 5hr/day)	Days/Week	7 (heating is 5 days/wk)	Weeks/Year	10 cycles/yr

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

@ 1110 °F and 13.816 psia

a.	NO_X	0.001280	lb/hr	0.000037	grains/ACF
b.	SO_2	0.001200	lb/hr	0.000035	grains/ACF
c.	CO	0.168000	lb/hr	0.004900	grains/ACF
d.	PM_{10}	0.011400	lb/hr	0.000333	grains/ACF
e.	Hydrocarbons	1.833	lb/hr	0.053472	grains/ACF
f.	VOCs	0.011000	lb/hr	0.000321	grains/ACF
g.	Pb	0.000001000	lb/hr	0.00000003	grains/ACF
h.	Specify other(s)				
	CO2	240.00	lb/hr	7.000	grains/ACF
	Methane	0.004600	lb/hr	0.000134	grains/ACF
	Formaldehyde	0.00015000	lb/hr	0.000004	grains/ACF
			lb/hr		grains/ACF

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

(2) Complete the Emission Points Data Sheet.

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

MONITORING	RECORDKEEPING
None	records of material dried per cycle and number of dtying cycles per year. annual record of natural gas usage by K-26
REPORTING	TESTING
None	None

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

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

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

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

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

Periodic burner cleaning and calibration

ATTACHMENT N
SUPPORTING EMISSIONS CALCULATIONS

APPENDIX N

K-26 Oven Emissions

Saint-Gobain Oven K-26 Emissions

Oven Description

Number of burners:	**5**			
Each Burner: BTU/hr	**400,000**		Tot. BTU/hr	**2,000,000**
BTU / mcf	**1,000**			
MCF / hr per burner	**0.4**		Tot. MCF / hr	**2.00**

Number of oven cycles per year	**5**

OPERATING HOURS **Carried through to NatGasEmissions Sheets**

Hrs per day	**5**	days per wk	**5**
wks per yr	**10**	Hours per year:	**250**

K-26 Oven Emissions

Saint-Gobain Oven K-26 Emissions

Oven Description

Air Emissions from 5 Natural Gas Burners Total of 2,000,000 BTU/hr Design Heat Input for all 5 Burners				
MCF / hr per burner	AP-42 Emission Factor	Maximum Uncontrolled Emission		
Pollutant	($lb/10^6$ ft^3)	(lb/hr)	(lb/day)	(tons/yr)
CO	84	0.168000	4.032000	0.021000
CO_2	120000	240.000	5760.000	30.000
NOx	0.64	0.001280	0.030720	0.000160
SO_2	0.6	0.001200	0.028800	0.000150
PM Total	7.6	0.015200	0.364800	0.001900
PM Condensable	5.7	0.011400	0.273600	0.001425
PM Filterable	1.9	0.003800	0.091200	0.000475
TOC	11	0.022000	0.528000	0.002750
VOC	5.5	0.011000	0.264000	0.001375
Methane	2.3	0.004600	0.110400	0.000575
Formaldehyde	0.07500	0.00015000	0.003600	0.000018750
Lead	0.0005	0.000001000	0.00002400	0.000000125
Chromium	0.00140	0.000002800	0.00006720	0.000000350

Notes:

Emission factors from AP-42 Chapter 1, Section 4 (7/98)

Hours of Operation: 5 hours of heating per day

5 days per week for 10 weeks per year

Hrs per day	**5**	days per wk	**5**
wks per yr	**10**	Hours per year:	**250**

250	Hours of operation per year
2,000,000	Total BTU/hr (5 burners @ 0.75 MBTU/hr each
2,000.00	cuft/hr of natural gas burned based on 1,000 Btu/cuft
500,000	cuft/year
500.00	mcf/year
0.5000	mmcf/year

Example: 84. lb CO / 1,000,000 ft3 x 2000 cu. ft./hr = 0.168 lb/hr CO

0.168 lb/hr CO x 24 hr/day = 4.032 lb/day

0.168 lb/hr x 250 hr/year x ton/2000 lb = 0.021 ton/year CO

Drying - Emissions to E-033

Saint-Gobain Oven K-26 Emissions

K-26 Oven Payload	**22**	**pounds of PEG (Polyethylene Glycol)**
The Drying Oven Payload =	**6560**	**pounds of raw refractory**

	Pounds equivalent per drying oven charge	Evaporative loss in Drying	Net Material in Drying Oven (lb)
Betapeg 8000 - Polyethylene Glycol	22	100.00%	0
Mixer Payload	**6560**	---	6538.0

or 22. tons

Assume complete volatilization of Polyethylene Glycol during the drying cycle.
Assume 100. percent of the volatile components will be driven off during the first 12. hours of heating.

Drying Cycle Time	75	Hours
Percent PEG initially driven Off	100	%
Time Volatiles Initially Driven Off	12	Hrs

Emissions go to Incinerator E-033

Volatile component	Volatiles driven off in drying (lb)	% Initially Driven off	Time Initially Driven Off (hr)	Emissions to E-033 Max. Uncontrolled Emission Rate (lb/hr)	Emissions to E-033 Max. Uncontrolled Emission Rate (lb/day)	Emissions to E-033 Max. Uncontrolled Emission Rate (tons/yr)
Polyethylene Glycol	22.0	100%	12	**1.8**	**22.0**	**0.110**

Number of oven cycles per year	**5**	
Total weight of material processed	**32800**	pounds

SUMMARY OF EMISSIONS TO EMISSION POINTS EP-033

Saint-Gobain Oven K-26 Emissions

Pollutant	Oven Emissions (lb/hr)	Oven Emissions (lb/day)	Total Uncontrolled Emissions (ton/year)	Total Uncontrolled Emissions (grains / ACF)	Total Uncontrolled Emissions (mg/cu meter)	*Uncontrolled Emissions when operated as a Kiln (ton/year)*
CO	0.168000	4.032000	0.021000	0.004900	11.212925	***3.37***
CO2	240.000	5760.000	30.000	7.000000	16018.4640	
NOx	0.001280	0.030720	0.000160	0.000037	0.085432	***2.72***
SO2	0.001200	0.028800	0.000150	0.000035	0.080092	***0.44***
PM Total	0.015200	0.364800	0.001900	0.000443	1.014503	
PM 10	0.011400	0.273600	0.001425	0.000333	0.760877	***0.14***
PM 2.5	0.003800	0.091200	0.000475	0.000111	0.253626	
TOC	0.022000	0.528000	0.002750	0.000642	1.468359	
VOC	0.011000	0.264000	0.001375	0.000321	0.734180	
Methane	0.004600	0.110400	0.000575	0.000134	0.307021	
Formaldehyde	0.00015000	0.00360000	0.00001875	0.000004	0.010012	
Lead	0.000001000	0.000024000	0.000000125	0.00000003	0.000067	
Polyethylene Glycol	1.833	22.000	0.110	0.053472	122.363267	
VOC including Polyethylene Glycol	1.844	22.264	0.111	0.053793	123.097446	***1.15***
Chromium	0.000002800	0.000067200	0.000000350	0.00000008	0.000187	***0.01***

Average Flow Rate (ACFM) **4000**

lb/hr*7000/(60 * cfm) = grains per cu ft

lb/hr*266974.4/cfm = mg/cu meter

K-26 Kiln Stack Sample Results Summary

Contaminant Permit Limit (lb/hr)	2007 Stack Test (Average Emissions per Event) (lb/hr)		Permit Allowable (lb/hr)	2017 Stack Test (Average Emissions per Event) (lb/hr)		Permit Allowable (lb/hr)	Average of all Stack Tests (lb/hr)		Grains / cubic ft.
	< 1480 C	> 1480 C		< 1480 C	> 1480 C		< 1480 C	> 1480 C	
Particulate Matter	0.030		0.047	0.007		0.047	**0.019**		**0.00100**
Carbon Monoxide	2.430		11.000	4.430		11.000	**3.430**		**0.18585**
Nitrogen Oxides	0.019		0.950	0.017		0.950	**0.018**		**0.00098**
Sulfur Dioxide	0.010		0.100	0.0008		0.100	**0.0054**		**0.00029**
Total Hydrocarbons (as Propane)	0.340		3.800	0.950		3.800	**0.645**		**0.03495**
Total Chromium	not tested		0.010	0.0001		0.010	**0.0001**		**0.000005**
Average Flow Rate (ACFM)	1695.333			2611			**2153.167**		

lb/hr*7000/(60 * cfm) = grains per cu ft

ATTACHMENT P
PUBLIC NOTICE

ATTACHMENT P

AIR QUALITY PERMIT NOTICE
Notice of Application for
Class II Administrative Update

Notice is given that Saint-Gobain Ceramics Plastics, Inc. dba Corhart Refractories has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Class II Administrative Update of the use of a kiln, K-26, reducing its function to dryer status. The facility is located at 87 Corhart Road, Buckhannon, WV 26201. The latitude and longitude coordinates of the affected emission point are 38.999378 degrees North, 80.244444 degrees West.

The applicant estimates the potential to decrease discharges from the dryer unit, resulting in the following annual emissions:

Particulate Matter (PM-10)	0.001425 tons per year compared to 0.014 tons per year when operated as a kiln
Sulfur Dioxide	0.000150 tons per year compared to 0.44 tons per year when operated as a kiln
Carbon Monoxide	0.021000 tons per year compared to 3.37 tons per year when operated as a kiln
Nitrogen Oxides	0.000160 tons per year compared to 2.72 tons per year when operated as a kiln
VOC (Polyethylene Glycol)	0.110 tons per year compared to 1.15 tons per year when operated as a kiln
Total Chromium	0.00000035 tons per year compared to 0.01 tons per year when operated as a kiln

The unit has been operated as a dryer since about 2020, when it was learned that it could no longer achieve the temperatures to continue its use as a kiln.

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. Written comments will also be received via email at DEPAirQualityPermitting@WV.gov.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 41281, during normal business hours.

Dated this the 15th Day of November 2024.

By: Saint-Gobain Ceramics Plastics, Inc. dba Corhart Refractories
Albin Thomas
Plant Manager
87 Corhart Road
Buckhannon, WV 26201-4528

ATTACHMENT S
TITLE V PERMIT REVISION INFORMATION

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

TITLE V PERMIT REVISION APPLICATION

PLEASE CHECK TYPE OF TITLE V PERMIT REVISION:

- ☐ **ADMINISTRATIVE AMENDMENT**
- ☐ **MINOR MODIFICATION**
- ☐ **SIGNIFICANT MODIFICATION**
- ☐ **OFF-PERMIT CHANGE**
- ☐ **OPERATIONAL FLEXIBILITY [502(B)(10) CHANGES]**
- ☐ **REOPENING**

TITLE V PERMIT NUMBER:
R30- 09700001-2020

WHEN DID OR WHEN WILL THE CHANGES OCCUR?
MM/DD/YYYY :

SIC CODES: PRIMARY: 3297 **SECONDARY:**

Refer to "Title V Revision Guidance" (Appendix A, "Title V Permit Revision Flowchart"), for type of revision, and to Section 7 of this Application for Application Completeness and Ability to Operate information

Section 1: General Information

a. Name of Applicant ***(As registered with the WV Secretary of State's Office)*****:**	**b. Facility Name or Location:**
Saint-Gobain Ceramics & Plastics, Inc.	87 Corhart Road, Buckhannon, WV 26201

b. Contact Information

Responsible Official: Albin Thomas		Title: Plant Manager
Street or P.O. Box: 87 Corhart Road		
City: Buckhannon	State: WV	Zip: 26201
Telephone Number: (304) 473 - 1214	Fax Number: ( ) -	E-mail: albin.thomas@saint-gobain.com
Environmental Contact: Brian Gregor		Title: Director
Street or P.O. Box: 87 Corhart Road		
City: Buckhannon	State: WV	Zip: 26201-4528
Telephone Number: (304) 473 - 1274	Fax Number: ( ) -	E-mail: Brian.Gregor@saint-gobain.com
Application Preparer: John Keeling		Title: Director
Company: Benchmark Safety, Health & Environmental Services, PLLC		
Street or P.O. Box: 400 Hite Oaks Blvd.		
City: Bridgeport	State: WV	Zip: 26330
Telephone Number: (304) 669 - 9643	Fax Number: ( ) -	E-mail: jkeeling@benchmarkpllc.com

Person to contact if we have questions regarding this Application: John Keeling

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

Section 2: Revision Information

a. Description of Changes Associated with this Permit Revision

Provide a general description of changes to the facility.

This facility has numerous natural gas fueled kilns used for the sintering of ceramic shapes produced at the facility. The modifications requested in this Significant Title V Permit Modification Application are associated with existing kilns which were constructed under a Regulation 13 Construction Permit. This Significant Modification will not change any of the R13 permit conditions in that the subject R-13 Permits did not contain the specific stack testing requirements contained in previous or the current Regulation 30 Permit. The modifications requested are: 1. Removal of the requirement for stack testing of Kiln K-26 since that Kiln is only used for drying with drying temperatures limited to 600 degrees Centigrade due to the age and condition of the kiln. If DEP desires, there can be a condition for this kiln which requires the current stack testing schedule if the kiln is used for sintering of product at temperatures above 600 degrees Centigrade. 2. Removal of the requirement for testing SO2 and PM for Kilns K-26 and K-27 since the kilns are operated with pipeline quality natural gas and recordkeeping and monitoring is included to demonstrate compliance. 3. To allow Saint Gobain the ability to submit a testing schedule that allows for some amount of flexibility, while providing test results that adequately represent the various kilns on site. For example, since K-27 and K-30 are the same design, they could test either of these two kilns during the permit term.

b. 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 as **ATTACHMENT A.**

c. Provide a **Plot Plan(s**) if new emission points were added since latest revision, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the new/modified stationary source(s) is located as **ATTACHMENT B.** For instructions, refer to "***Plot Plan - Guidelines***"**.**

d. Provide a detailed **Process Flow Diagram(s)** if new emission points were added since latest revision, showing each new/modified process or emissions unit as **ATTACHMENT C.** Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

e. Emission Units Table

Fill out the **Emission Units Table** for new and/or modified equipment and provide it as **ATTACHMENT D**.

f. Emission Units Form(s)

For each new and/or modified emission unit(s) with applicable requirement(s) listed in the **Emission Units Table**, fill out and provide an **Emission Unit Form(s)** as **ATTACHMENT E**.

Are you in compliance with all facility-wide applicable requirements? ☐ Yes ☐ No

For each new and/or modified emission unit not in compliance with an applicable requirement, fill out a **Schedule of Compliance Form** as **ATTACHMENT F**.

g. Control Devices

For each new and/or modified control device listed in the **Emission Units Table**, fill out and provide an **Air Pollution Control Device Form(s)** as **ATTACHMENT G**.

For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Part 70 Major Source Threshold level, refer to the **Compliance Assurance Monitoring (CAM) Form(s)** for CAM applicability. If applicable, please check appropriate box in Section 3(a) below, fill out and provide these forms for each Pollutant Specific Emission Unit (PSEU) as **ATTACHMENT H**.

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

Section 3: New Applicable Requirements

a. New Applicable Requirements Summary	
Mark all applicable requirements associated with the changes involved with this permit revision:	
☐ SIP	☐ FIP
☐ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☐ NESHAP (45CSR34)	☐ Nonattainment NSR (45CSR19)
☐ Section 111 NSPS (Subpart(s)_____)	☐ Section 112(d) MACT standards (Subpart(s)_____)
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☐ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ Compliance Assurance Monitoring (40CFR64)
☐ CAIR NO_x Annual Trading Program (45CSR39)	☐ CAIR NO_x Ozone Season Trading Program (45CSR26)
☐ CAIR SO_2 Trading Program (45CSR41)	

b. Non Applicability Determinations

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

☐ **Permit Shield Requested** *(not applicable to Minor Modifications, Off-Permit Changes, or for Operational Flexibility)*

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

c. Suggested Title V Draft Permit Language

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

See Attachment I

d. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision

Permit or Consent Order Number	Date of Issuance (MM/DD/YYYY)	Permit/Consent Order Condition Number
R30-09700001-2020	December 8, 2020	

e. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision

Permit Number	Date of Issuance (MM/DD/YYYY)	Permit/Consent Order Condition Number

Section 4: Change in Potential Emissions

Pollutant	Change in Potential Emissions (+ or -), TPY	For Off-Permit Changes: Provide Total Aggregated Emissions Increase Since Last Permit/Modification
	- NO CHANGES -	

Provide **Supporting Emission Calculations/Estimations** as **ATTACHMENT J**.

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

Section 5: Certification of Information

a. Certification For Use Of Minor Modification Procedures ***(Required Only for Minor Modification Requests)***

Note:	*This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows:*

i. Proposed changes do not violate any applicable requirement;

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

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

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

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

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

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

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

(Signed): _____ *(Please use blue ink)* Date: 11 / 13 / 2024 *(Please use blue ink)*

Named (typed): Albin Thomas Title: Plant Manager

b. Certification of Truth, Accuracy and Completeness and Certification of Compliance
(Required For All Revision Requests)

Note:	*This Certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.*

Certification of Truth, Accuracy and Completeness

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

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.

Responsible official (type or print)

Name: Albin Thomas	Title: Plant Manager

Responsible official's signature:

Signature: _____ Signature Date: 11/13/2024

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

Section 6: Attachments

Note: Please check all applicable attachments included with this permit application:	
☐	ATTACHMENT A: Business Confidentiality Claims
☐	ATTACHMENT B: Plot Plan(s)
☐	ATTACHMENT C: Process Flow Diagram(s)
☐	ATTACHMENT D: Emission Units Table
☐	ATTACHMENT E: Emission Unit Form(s)
☐	ATTACHMENT F: Schedule of Compliance Form(s)
☐	ATTACHMENT G: Air Pollution Control Device Form(s)
☐	ATTACHMENT H: Compliance Assurance Monitoring Form(s)
☑	ATTACHMENT I: Suggested Title V Draft Permit Language
☐	ATTACHMENT J: Supporting Emission Calculations/Estimations

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

Section 7: Application Completeness and Ability to Operate information for different types of Title V Permit revisions

(Refer to "Title V Revision Guidance" for more information)

Type of Revision	Application/Notification Requirements	Ability to Operate
Administrative Amendment	☐ Description of change ☐ Supplemental information (rationale) ☐ Certification of application and compliance (Section 5(b))	Upon submittal of the application
Minor Modification	☐ Description of change ☐ Associated change in emissions ☐ Sample Calculations/estimations for determining emissions ☐ List of new applicable requirements associated with changes ☐ List of R13/R14 permits associated with the changes ☐ Suggested draft permit language ☐ Certification for use of Minor Modification (Section 5(a)) ☐ Certification of application and compliance (Section 5(b)) ***No Permit Shield***	After seven (7) days from the submittal of the application, or upon issuance of the R13/R14 permit (if any), whichever is later
Significant Modification	☑ Description of change ☐ Associated change in emissions ☐ Sample Calculations/estimations for determining emissions ☐ List of R13/R14 permits associated with the changes ☐ List of new applicable requirements associated with changes ☐ Request for permit shield ☐ Updated drawings, plot plans, process flow diagrams, etc. ☑ Certification of application and compliance (Section 5(b))	Upon issuance of the modified Title V permit (if changes either conflict with, or are prohibited by existing Title V Permit terms/ conditions), OR upon obtaining of proper R13/ R14 Permit for first 12 months (if changes neither conflict with, nor are prohibited by existing Title V Permit terms/conditions)
Off-Permit Changes	☐ Notification/application to DAQ and U.S.E.P.A. within 2 business days of the change ☐ Description of the change ☐ The date on which the change will occur or has occurred ☐ Pollutants and amounts emitted ☐ Sample Calculations/estimations for determining emissions ☐ Any new applicable requirements that will apply to changes ☐ Certification of application and compliance (Section 5(b)) ***No Permit Shield***	After two (2) days from the submittal of the application
Operational Flexibility	☐ Notification/application submitted to DAQ and U.S.E.P.A. in advance (7 days prior to making changes) ☐ Description of the change ☐ The date on which the change is to occur ☐ Permit terms and conditions affected by the change ☐ Certification of application and compliance (Section 5(b)) ***No Permit Shield***	After seven (7) days from the submittal of the application/notification to DAQ and EPA
Reopening	☐ Description of change ☐ List of new applicable requirements associated with changes ☐ Suggested draft permit language ☐ Certification of application and compliance (Section 5(b))	Ability to operate is not reflected by the changes

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

Attachment I

4.0 Source-Specific Requirements for Kilns K-26, K-27, K-30, K-33, and K-34 (Emission Points 033, 022, 023, 045, and 046)

4.1. Limitations and Standards

4.1.1. The following kilns shall not exceed the permitted limits in the table below:

Emission Point ID	Kiln No.	Maximum Natural Gas Usage (mmcf/yr)	Maximum # of hours the Kiln is to be operated above 1480°C (hours/year)
022	K-27	91.80	1,314
023	K-30	91.80	1,314
033	K-26	59.13	~~1,305~~
045	K-33	78.84	1,260
046	K-34	78.84	1,260

[45CSR13 - R13-2433, Condition 4.1.3.a]

4.1.2. Emissions to the atmosphere from the permitted emission points shall not exceed the following:

Emission Point	CO (lb/hr)	NO_x (lb/hr)		PM (lb/hr)	SO_2 (lb/hr)	VOC (lb/hr)	Total Chromium (lb/hr)
022	48	1.47[1]	5.47[2]	0.211	0.1	17	0.045
023	48	1.47[1]	5.47[2]	0.211	0.1	17	0.045
033	11	0.95[1]	3.52[2]	0.047	0.1	3.8	0.010
045	60	1.26[1]	4.70[2]	0.264	0.1	21	0.056
046	60	1.26[1]	4.70[2]	0.264	0.1	21	0.056

1- This limit is only applicable when the kiln temperature is at or below 1480° C.
2- This limit is only applicable when the kiln temperature is above 1480° C.

Emission Point	CO (tpy)	NO_x (tpy)	PM (tpy)	SO_2 (tpy)	VOC (tpy)	Total Chromium (tpy)
022	14.7	4.23	0.61	0.44	5.10	0.08
023	14.7	4.23	0.61	0.44	5.10	0.08
033	3.37	2.72	0.14	0.44	1.15	0.018
045	18.3	3.63	0.76	0.44	6.37	0.10
046	18.3	3.63	0.76	0.44	6.37	0.10

Compliance with the hourly PM limits will assure compliance with the weight based emission limits of Rule 7 at 45CSR§7-4.1.
[45CSR13 - R13-2433, Condition 4.1.3.b and c, 45CSR§7-4.1]

4.1.3. Visible emissions from the emission points 022, 023, 033, 045, and 046 shall not be discharged to the atmosphere in amounts greater than 20% opacity except for visible particulate matter emission less than 40% opacity for a period or periods aggregating no more than 5 minutes in any 60 minute period.
[45CSR§§7-3.1., 3.2, and 45CSR13 - R13-2433, 4.1.3.d, Emission Point IDs (022, 023, 033, 045, 046)]

4.3. Testing Requirements

or K-36

4.3.1. Testing of Kilns ~~K-26 and~~ K-27 once per permit term or at the request of the Director shall be performed to demonstrate compliance with the CO, NOx, ~~SO_2~~, VOC, ~~and weight-based PM emission limits~~.

Tests that are required by the Director to determine compliance shall be conducted in accordance with the methods as set forth below. The Director may approve a different test method or approve an alternative method upon written submission of such plan within the protocol submitted under Section 3.3.1.

- Tests to determine compliance with TSP and PM_{10} emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 5, 5A, 5B, 5C, 5D, 5E, 5F, 5G, or 5H.

- Tests to determine compliance with SO_2 emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 6, 6A, 6B, or 6C.

- Tests to determine compliance with CO emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 10, 10A, or 10B.

- Tests to determine compliance with NO_x emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 7, 7A, 7B, 7C, 7D, or 7E.

- Tests to determine compliance with VOC emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 25, or 25A.

[45CSR§30-5.1.c.]

4.3.2. A calculation utilizing production records and the results of emission testing shall be used for demonstrating compliance with the yearly emission limits in 4.1.2.
[45CSR§30-5.1.c.]

4.4. Recordkeeping Requirements

4.4.1. Compliance with the SO_2 and weight-based PM emission limitations established for Kilns K-26, K-27, K-30, K-33, and K-34 shall be demonstrated by the following:

a. Demonstrate that natural gas was used as the only fuel in Kilns K-26, K-27, K-30, K-33, and K-34.

b. Maintain records of the quantity of fuel burned in such units on a monthly basis.

c. The owner or operator of a unit(s) which burns pipeline quality natural gas shall maintain records on the quality of fuel burned in such unit(s). Such requirement will be deemed to be satisfied by an initial characterization of the fuel quality, which shall include, but may not be limited to, the ash, sulfur, moisture, volatile matter, and BTU content. Such data may be obtained from the supplier(s), ASTM testing, or other method approved by the Director.

[45CSR§30-5.1.c.]

4.4.2. The permittee shall maintain records of all monitoring data required by Section 4.2.2. documenting the date and time of each visible emission check, the emission point or equipment/source identification number, the name or means of identification of the observer, the results of the check(s), whether the visible emissions are normal for the process, and, if applicable, all corrective measures taken or planned. The permittee shall also record the general weather conditions (i.e. sunny, approximately 80°F, 6 - 10 mph NE wind) during the visual emission check(s). An example form is supplied as Appendix A of this Title V permit. Should a visible

If visible emissions are present at a source(s) for three (3) consecutive monthly checks, the permittee shall conduct an opacity reading at that source(s) using the procedures and requirements of Method 9 as soon as practicable, but within seventy-two (72) hours of the final visual emission check. A Method 9 observation at a source(s) restarts the count of the number of consecutive readings with the presence of visible emissions. **[45CSR13 - R13-2433, Condition 4.2.2, and 45CSR§30-5.1.c, Emission Points (049, 050, 051)]**

6.2.3. The afterburner and kiln shall be equipped with a temperature measuring device/system that measures the temperature in the combustion chamber of each kiln and afterburner. This device shall have an accuracy of $\pm$ 1.5^{0}C or $\pm$ 1 percent of the temperature value expressed in degrees Celsius, whichever is larger. The location of the temperature sensor(s) must be in a location that provides a representative temperature of each kiln or afterburner combustion chamber. In addition to measuring, such device or system shall record the measured temperature in intervals of no greater than once every 15 minutes. Such system shall be maintained at all times while the kiln is in operation.
[45CSR13 - R13-2433, Condition 4.1.1.g, 45CSR§30-5.1.c, Equipment ID (K-49)]

6.3. Testing Requirements

For K36 or K-27 and K-35

6.3.1. Testing once per permit term or at the request of the Director shall be performed to demonstrate compliance with the CO, NOx, and VOC emission limits in 6.1.2 and 6.1.8.

Tests that are required by the Director to determine compliance shall be conducted in accordance with the methods as set forth below. The Director may approve a different test method or approve an alternative method upon written submission of such plan within the protocol submitted under Section 3.3.1.

- Tests to determine compliance with CO emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 10, 10A, or 10B.

- Tests to determine compliance with NO_X emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 7, 7A, 7B, 7C, 71), or 7E.

- Tests to determine compliance with VOC emission limits shall be conducted in accordance with 40 C.F.R. Part 60 Appendix A Method 25, or 25A.

[45CSR§30-5.1.e, Equipment IDs (K-35, K-36)]

6.3.2. A calculation utilizing production records and the results of emission testing shall be used for demonstrating compliance with the yearly emission limits in 6.1.3 and 6.1.9.
[45CSR§30-5.1.c, Equipment IDs (K-35, K-36)]

6.4. Recordkeeping Requirements

6.4.1. Compliance with the SO_2 and weight-based PM emission limitations established for the K-35 Kiln (049) K-36 Kiln (050), and K-38 Kiln (051) shall be demonstrated by the following:

a. Demonstrate that natural gas was used as the only fuel in the K-35 Kiln (049), K-36 Kiln (050), and K-38 Kiln (051).

b. Maintain records of the quantity of fuel burned in such units on a monthly basis.