West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Draft/Proposed Significant Modification Permitting Action Under 45CSR30 and Title V of the Clean Air Act

This Fact Sheet serves to address the changes specific to this Significant Modification, and shall be considered a supplement to the Fact Sheet corresponding with the Title V operating permit issued on December 8, 2020.

Permit Number: **R30-09700001-2020**
Application Received: **November 14, 2024**
Plant Identification Number: **097-00001**
Permittee: **Saint-Gobain Ceramics & Plastics, Inc.**
dba. Corhart Refractories
Mailing Address: **Route 10, Box 82**
Buchannon, WV 26201

Permit Action Number: *SM01* Revised: *Draft/Proposed*

Physical Location:	Buckhannon, Upshur County, West Virginia
UTM Coordinates:	465.3 km Easting • 4,316.8 km Northing • Zone 17
Directions:	Interstate 79 to Exit 99. Proceed east on US Route 33 to Route 151 at Brushy Fork. Go east on Route 151 to Liggett Avenue. Travel 1/10 mile to plant on the left.

Facility Description

The Corhart Refractories Buckhannon facility is a non-clay refractory manufacturing facility covered by Standard Industrial Classification (SIC) 3297. The facility has the potential to operate seven (7) days per week, twenty-four (24) hours per day and fifty-two (52) weeks per year. The Title V renewal application encompasses six (6) natural gas fueled dryers, twenty three (23) natural gas fueled kilns, one (1) diesel fueled emergency back-up electrical generator, various pieces of equipment to form articles, one (1) bulk material storage bin, various crushers, screeners, and mixers for material handling, various machines for surface grinding, sawing, milling, drilling, lathes, and packaging equipment.

The operations at the facility are broken up into three product lines, chromium oxide, zirconium silicate (zircon), and tin oxide. All products are used for refractory type applications mainly within the glass industry. The tin oxide, which makes up the smallest fraction of products, is used as a heating electrode. The other products are primarily used to line high temperature glass melting vessels and troughs.

The chromium oxide product is made up of chromium (III) oxide [Cr_2O_3] and small amounts of binder and titanium oxide. These raw materials are blended and pressed into various forms. This green material is dried and then treated in high temperature kilns for cycles extending from 7 to 28 days. The chromium oxide product utilizes a reducing atmosphere within the kilns, which results in fuel rich burner mixtures.

The Zircon product is made up of zirconium (IV) silicate [$ZnSiO_4$] and small amounts of binder. This particular product requires a certain percentage of grog, which is pre-fired zirconium silicate that has been pressed and dried and then ground and reintroduced as raw material. Zircon production utilizes isostatic pressing techniques to form various shapes that are then treated in high temperature kilns for cycle times extending from 13 to 50 days.

Tin oxide products also contain small amounts of antimony dioxide and cupric oxide. They are isomolded into shapes and then heat treated in high temperature kilns, which reaches 1480˚ C, for an 11 day cycle.

After the heat treating process, the products are cut into various shapes, assembled into customer defined geometries like a puzzle and then labeled for shipping.

This modification is to add R13-2433D requirements to repurpose Kiln K-26 to use as a dryer/low temperature kiln (600 degrees C or less).

Emissions Summary

The change in potential emissions associated with the significant modification (SM01) is as follows:

Pollutants	Change in Potential Emissions, TPY
CO	-1.99
NO_x	-2.60
SO_2	-0.43
PM	-0.13
VOC	-0.67
Total Chromium	-0.017

Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit 110.99 tons per year of carbon monoxide (CO) and 100.4 tons per year of Nitrogen Oxides (NO_x). Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Corhart Refractories is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

The modification to this facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR7	Particulate matter and opacity limits
	45CSR13	New Source Construction
	45CSR30	Operating permit requirement.
State Only:	45CSR4	No objectionable odors.

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

The active permits/consent orders affected by this modification are as follows:

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit *(if any)*
R13-2433D	01/27/2025	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

R13-2433D Changes

Changes from R13-2433D have been incorporated in the Title V permit and include the following:

Kiln K-26 was repurposed to be used as a dryer/low temperature kiln (600 degrees C or less). 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 degrees 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.

- The company proposed an annual limit of 250 hours per year for K-26. Thus, the natural gas limitation in Condition 4.1.1. was changed to 0.5 MMSCF/yr.
- Condition 4.1.1. includes a limit on the maximum number of hours per year the kilns can be operated above 1,480°C. As a drying oven operating below 600°C, this limitation is no longer necessary for K-26 (033) and was reduced to 0 hours.
- Emission limits for the Emission Point- 033 (K-26) were updated in condition 4.1.2 of this permit.
- Condition 4.1.5. was added to limit the operating temperature of K-26 (033) to 600°C or less.
- Condition 4.2.1 was updated to include recordkeeping of the periods K-26 operated above 600℃.
- In Conditions 4.2.2, 6.2.1, and 6.2.2, “the purpose of” was deleted from the first sentence in accordance with R13-2433D.
- In Condition 4.3.1, the requirement to conduct testing on K-26 was removed since it is no longer used as a kiln and must be operated no more than 250 hours per year at a temperature of 600℃ or less. Additionally,

testing of SO_2 and weight-based PM emission limits once per term for Kiln K-27 was removed since the kiln is operated using only pipeline quality natural gas which has a low potential for generating PM and SO_2 emissions. Compliance with the SO_2 and weight-based PM limits are already demonstrated by using only pipeline quality natural gas and maintaining records of the quantity and quality of the natural gas burned on a monthly basis in accordance with existing condition 4.4.1.

40 C.F.R. 63 Subpart ZZZZ Changes

- 40 C.F.R. 63 Subpart ZZZZ requirements were updated in Section 5 of this permit due to changes to the regulation. This affected conditions 5.1.4 and 5.4.2.

Title V Boilerplate Changes

- **Conditions 2.1.3., 3.5.4., and 3.5.8.a.2.** – Revised resulting from changes to 45CSR30.
- **Condition 2.11.4.** – The citation was revised due to changes to 45CSR30.
- **Condition 2.22.1.** – The citation was revised because 45CSR38 has been repealed.
- **Condition 3.5.3.** – The mailing address for the U.S. EPA was revised.
- **Conditions 2.17., 3.5.7., 3.5.8.a.1.** – Deleted based on changes to 45CSR30.
- **Conditions 3.1.6. and 3.3.1. –** The citation was revised to refer to the current version of the WV Code.
- **Condition 3.3.1.b. –** This condition was updated to include the following additional language: "If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit shall be revised in accordance with 45CSR§30-6.4 or 45CSR§30-6.5 as applicable."

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

a. 40 CFR Part 64 – The facility did not have any pollutant specific emissions units (PSEUs) that satisfied all of the applicability criteria requirements of 40 CFR §64.2(a). There have been no emission units added to this permit for this modification, so CAM remains not applicable to any emission unit listed in the permit.

b. 40 C.F.R. 63, subpart SSSSS – National Emission Standards for Hazardous Air Pollutants: Refractory Products Manufacturing. This regulation does not apply to Corhart because the facility is not a major source of HAPs.

c. 40 C.F.R. 63, subpart DDDDD – National Emission Standards for Hazardous Air Pollutants: Industrial/Commercial/Institutional Boilers and Process Heaters (Major Sources). This regulation does not apply to Corhart because the facility is not defined as a major source of HAPs.

d. 40 C.F.R. 63, subpart HH – National Emission Standards for Hazardous Air Pollutants: Natural Gas Production Facilities including area sources. Although there is a small TEG unit onsite, the permittee does not operate the unit. The unit is under contract with and operated by the gas company.

Request for Variances or Alternatives

None

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: April 2, 2025
Ending Date: May 2, 2025

Point of Contact

All written comments should be addressed to the following individual and office:

Beena Modi
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 41283
Beena.j.modi@wv.gov

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

(**Choose**) Not applicable.

OR

Describe response to comments that are received and/or document any changes to the final permit from the draft/proposed permit.