

Fact Sheet



For Final 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 April 6, 2010.

Permit Number: **R30-09700001-2010**
Application Received: **May 31, 2012**
Plant Identification Number: **097-00001**
Permittee: **Saint-Gobain Ceramics and Plastics, Inc.**
dba. Corhart Refractories
Mailing Address: **Route 10, Box 82**
Buckhannon, WV 26201

Permit Action Number: *SM01* Revised: *November 30, 2012*

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 seven (7) natural gas fueled dryers, twenty two (22) 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 [Cr₂O₃] 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 [ZnSiO₄] 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.

In 2011, Saint-Gobain issued a corporate policy to reduce greenhouse gases (GHG) across the company by 6% before 2013. One area Saint-Gobain believes could help meet this goal without affecting the quality of the products is removing or reducing the use of two (2) afterburners. There are currently three (3) afterburners. One serves Kilns K-1 and K-2 (installed around 1981), one on Kiln K-35 (installed in 2001), and another for Kiln K-36 (installed in 2005).

As the result of this significant modification, the afterburner from Kiln K-36 will be removed, and afterburner for Kiln K-35 would remain in place. Should Saint-Gobain need to use Kiln K-35 to produce chrome grog which has a potential for excess visible emissions, the afterburner would be used in accordance with the current permit requirements. Chrome grog is currently produced in Kilns K-1 and K-2, which will still employ an afterburner. Removal of the Kiln K-36 afterburner could result in a decrease in GHG potential for 3,049 tons of carbon dioxide equivalent (CO₂e) per year (based on maximum permitted natural gas consumption rate).

Also, this modification covers removal of the Zircon Dryer #3 (Emission Point 003).

Emissions Summary

The following emission increases resulted from this modification:

Regulated Pollutants	PTE change (TPY)
Carbon Monoxide (CO)	+ 7.98
Volatile Organic Compounds (VOC)	+ 6.58

Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit 174.4 tons per year of carbon monoxide (CO). 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:	45CSR13	New Source Construction
	45CSR30	Operating permit requirement.
State Only:	None	

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

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (<i>if any</i>)
R13-2433C	October 17, 2012	

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 B," which may be downloaded from DAQ's website.

Determinations and Justifications

The following are changes to the permit:

- 1) Emission Units Table - Zircon Dryer #3 (Emission Point 003) and Kiln K-36 afterburner 050C were removed.
- 2) Requirement 3.3.1 – section “d” was added in accordance with condition 3.3.1.d of R13-2433C.
- 3) Requirements 4.1.4, 6.1.6 (formerly 6.1.7) and 7.1.4 – citation was corrected.
- 4) Requirements 4.2.2 and 6.2.2 – removed phrase “between April 1 to October 31” based on requirement 4.2.2 of R13-2433C.
- 5) Requirements 6.1.4 and 6.1.5 were combined into new requirement 6.1.4. Former requirement 6.1.4 is now 6.1.4.a. Former requirement 6.1.5 is now 6.1.4.b. Therefore requirements 6.1.6 through 6.1.10 were re-numbered to 6.1.5 through 6.1.9 respectively.
- 6) Requirements 6.1.2, 6.1.3, 6.1.7 (formerly 6.1.8) through 6.1.9 (formerly 6.1.10) – emission limits were corrected per R13-2433C.

- 7) Requirement 6.1.8 (formerly 6.1.9) – citation “45CSR§6-4.1” was removed because it is not applicable, since the Kiln K-36 afterburner is removed.
- 8) New requirement 6.1.10 was added based on condition 4.1.2.d of R13-2433C.
- 9) Requirements 6.1.11, 6.4.2 and 6.4.3 – references to 050C were removed.
- 10) Requirement 6.2.1 – revised based on requirement 4.2.1 of R13-2433C.
- 11) Requirement 8.1.2 was revised to delete PM emission limit for the Zircon Dryer #3 (Emission Point 003).

Non-Applicability Determinations

Compliance Assurance Monitoring plan – removal of the Kiln K-36 afterburner 050C doesn't trigger CAM plan applicability for the Kiln-36, because a unit without an add-on control device is not considered a PSEU.

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: October 15, 2012
Ending Date: November 14, 2012

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

Natalya V. Chertkovsky-Veselova
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

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.

Point of Contact

Natalya V. Chertkovsky-Veselova
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1220 • Fax: 304/926-0478

Response to Comments (Statement of Basis)

Not applicable.