

Fact Sheet



For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-03900005-2016**
Application Received: **February 3, 2016**
Plant Identification Number: **03900005**
Permittee: **Union Carbide Corporation**
Facility Name: **Institute Facility**
Business Unit: **Catalyst Plant (Group 1 of 8)**
Mailing Address: **P. O. Box 8361, South Charleston, WV 25303**

Physical Location: Institute, Kanawha County, West Virginia
UTM Coordinates: 432.189 km Easting • 4,248.754 km Northing • Zone 17
Directions: From I-64, take the Institute exit, turn right onto State Route 25. Plant is located about ½ mile west on Route 25.

Facility Description

Group 1 of 8 includes the Catalyst Plant.

The Catalyst Plant manufactures catalysts for use in the production of ethylene oxide and ethylene glycol. Raw materials are delivered to the plant in containers and tank trucks; and then stored in tanks. These process materials are combined and then sent to a reactor. The processing materials are recovered and the product is sent to storage. The product is shipped in containers. Heat for the process operations is provided by a natural gas heater (F-306).

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2015 Actual Emissions
Carbon Monoxide (CO)	1.66	0.55
Nitrogen Oxides (NO _x)	38.00	3.94

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2015 Actual Emissions
Particulate Matter (PM _{2.5})	6.26	0.44
Particulate Matter (PM ₁₀)	6.26	0.44
Total Particulate Matter (TSP)	6.26	0.44
Sulfur Dioxide (SO ₂)	1.20	< 0.01
Volatile Organic Compounds (VOC)	21.38	5.44

PM₁₀ is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2015 Actual Emissions
Total HAPs	2.00	0.12

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

Due to the facility-wide potential to emit 100 tons per year of criteria pollutant, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs, Union Carbide Corporation’s Institute Facility 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.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Control of particulate matter from indirect heat exchangers.
	45CSR6	Open burning prohibited.
	45CSR7	Particulate matter and opacity limits for manufacturing sources.
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Preconstruction permits for minor sources.
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	45CSR34	Emission Standards for Hazardous Air Pollutants.
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. 63, Subpart DDDDD	Boilers and Process Heaters MACT
40 C.F.R. 64	Compliance Assurance Monitoring (CAM)	
40 C.F.R. Part 82, Subpart F	Ozone depleting substances	
State Only:	45CSR4	No objectionable odors.
	45CSR§§21-37 and 40	Control of VOC Emissions

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>)
R13-1991B	May 23, 2003	
CO-R21-97-41	October 20, 1997	June 14, 2006 letter from J. L. Blatt

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

Miscellaneous:

The facility name has been changed from "Institute Plant" to "Institute Facility".

The business unit name has been changed from "EO Catalyst" to "Catalyst Plant".

The UTM Coordinates have been corrected.

In the Section 1.0 Emission Units Table, Vessel V-202 has been corrected to Y-202 and Vessel S-427 has been added.

40 C.F.R. 63, Subpart DDDDD - Boilers and Process Heaters MACT

Condition 3.1.9, which included placeholder language for the Boiler MACT for a 1977 natural gas-fired process heater of less than 5 MMBTU/hr (F-306) has been removed and the applicable requirements have been added:

New Condition 4.1.13 requires the Permittee to operate and maintain the fired heater in a manner consistent with safety and good air pollution practices.

New Condition 4.1.14 requires the Permittee to conduct a tune-up of the fired heater every 5 years and includes the inspections, optimizations, concentrations, and reporting required. It also provides delays on the burner inspection provided in 4.1.14.1 but it must be inspected at least once every 72 months.

New Condition 4.4.10 requires the Permittee to maintain records of the fired heater tune-ups.

New Condition 4.4.11 requires the Permittee to keep a copy of the record of the fired heater one-time energy assessment.

New Condition 4.4.12 requires the Permittee to maintain records of notifications and reports submitted.

New Condition 4.4.13 specifies how the Permittee maintain and keep records for the recordkeeping requirements of Conditions 4.4.10 through 4.4.12.

New Condition 4.5.4 requires that the Permittee submit compliance reports every five years.

New Condition 4.5.5 specifies what the reports must contain and how the reports in Condition 4.5.5 are to be submitted.

Non-Applicability Determinations

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

- a. **40 C.F.R. 63, Subpart EEEE – “National Emission Standards for Hazardous Air Pollutants: Organic Liquid Distribution (Non-Gasoline).”** Tank T-1004 is used to store an organic liquid containing HAPs, but is exempt from the control requirements because the liquid vapor pressure is less than 0.1 psia.

- b. **40CFR64 Compliance Assurance Monitoring (CAM)**
There has not been the addition of any pollutant-specific emission units that have potential pre-control device emissions of a regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

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 24, 2016
Ending Date: November 23, 2016

Point of Contact

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

Mike Egnor
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1208 • Fax: 304/926-0478
michael.egnor@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)

Comments were received from UCC Institute on November 17, 2016. The comments as well as the responses are given below:

Proposed Condition: 4.1.14.

Comment: For clarity, please add “(i) through (vi)” after “(a)(10)” within the citation of authority. See following suggested revision.

4.1.14. (citation revision only)

[45CSR34, 40CFR§63.7500(a)(1) and Table 3, 40CFR§63.7500(e), 40CFR§63.7515(d), 40CFR§§63.7540(a), (a)(10)(i) through (vi), (12), and (13)]

Response:

The clarified citation has been added to Condition 4.1.14.

Proposed Condition: 4.1.14.7.

Comment: This condition has been discovered to be non-applicable. The requirement comes from 40 C.F.R. §63.7540(a)(12). The reasoning for this determination is that the language from this paragraph states “If an oxygen trim system is utilized on a unit without emission standards to reduce the tune-up to once every 5 years (emphasis added), set the oxygen level no lower than the oxygen concentration measured during the most recent tune-up. However, the reason for the 5 year frequency for the tune-up is based upon the heat input capacity being less than or equal to 5 million Btu per hour as written in the opening sentence of this same paragraph as follows. “If your boiler or process heater has a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour and the unit is in the units designed to burn gas 1 (emphasis added); units designed to burn gas 2 (other); or units designed to burn light liquid subcategories, or meets the definition of limited-use boiler or process heater in §63.7575, you must conduct a tune-up of the boiler or process heater every 5 years (emphasis added) as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance. See following suggested revision.

~~4.1.14.7 Set the oxygen level no lower than the oxygen concentration measured during the most recent tune up.~~

Response: 40CFR§63.7540(a)(12) states that if an oxygen trim system is utilized on a unit without emission standards to reduce the tune-up frequency to once every 5 years, set the oxygen level no lower than the oxygen concentration measured during the most recent tune-up. Since the fired heater (F-306) is less than 5 MMBTU/hr, it already has a tune-up frequency of once every 5 years. The frequency was not reduced because of an oxygen trim system, and there are no emission standards from this Subpart. Therefore Condition 4.1.14.7 does not apply and has been removed from the Permit.

Proposed Condition: 4.4.9.

Comment: This proposed condition contains a cross-reference to Condition 4.2.9. We believe this condition should reference Condition 4.2.8. See following suggested revision.

4.4.9. General recordkeeping requirements for 40 C.F.R. Part 64 (CAM). The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 40 C.F.R. §64.8 (Condition 4.2.98) and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under 40 C.F.R. Part 64 (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). [40 C.F.R. § 64.9(b); 45CSR§30-5.1.c.]

Response: The citation has been corrected.

Proposed Condition: 4.4.10.

Comment: We ask that the citation reference §63.7560(b) instead of §63.7555(a)(2), as we incorrectly identified this reference in our application. See following suggested revision.

4.4.10. (citation revision only)
[45CSR34, 40 C.F.R. §63.7555(a)(2)7560(b)]

Response: The requirement to keep a record/report of tune-ups is required under 40CFR§63.7540(a)(10) which is in Condition 4.1.14. 40CFR§63.7560(b) is already in the Permit as Condition 4.4.13(b). Condition 4.4.10 will be revised to state that "...in accordance with Condition 4.4.13.b."

Proposed Condition: 4.4.11.

Comment: We ask that the citation reference 40 C.F.R. 63, Subpart DDDDD, Table 10 and §63.10(b)(2)(xiv), as a more appropriate reference than §63.7555(a)(2) listed in our application. See following suggested revision.

4.4.11. (citation revision only)
[45CSR34, 40 C.F.R. 63, Subpart DDDDD, Table 10 and 40 C. F. R. §63.7555(a)(2)§63.10(b)(2)(xiv)]

Response: DAQ feels that the correct citation would be 40CFR§63.7555(a)(1), which requires records be kept of all documentation supporting the Initial Notification or Notification of Compliance Status. As Condition 4.4.12 has this condition, Condition 4.4.11 will reference Condition 4.4.12.