

# Fact Sheet



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

Permit Number: **R30-03900005-2017 (4 of 8)**

Application Received: **July 29, 2016**

Plant Identification Number: **039-00005**

Permittee: **Union Carbide Corporation**

Facility Name: **Institute Facility**

Business Unit: **Glutaraldehyde Plant (Group 4 of 8)**

Mailing Address: **P. O. Box 8361, South Charleston, WV 25303**

*Revised: N/A*

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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.

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### Facility Description

Group 4 of 8 is the Glutaraldehyde Process Unit. Glutaraldehyde is produced by a reaction of methoxydihydropyran (MDP) with water in a reaction system. The reaction system effluent is pressured to a recovery system where glutaraldehyde is separated from methanol, a co-product of the reaction. Methanol and glutaraldehyde are recovered from the refining system. The glutaraldehyde is processed into different grades in blend tanks. Various grades of glutaraldehyde are shipped via tank truck, tote tanks, drums, and other small containers.

**Emissions Summary**

<b>Glutaraldehyde Plant Emissions Summary [Tons per Year]</b>		
<b>Regulated Pollutants</b>	<b>Potential Emissions</b>	<b>2015 Actual Emissions</b>
Carbon Monoxide (CO)	1.40	0.10
Nitrogen Oxides (NO <sub>x</sub> )	0.30	0.02
Particulate Matter (PM <sub>2.5</sub> )	0.01	Included with TSP
Particulate Matter (PM <sub>10</sub> )	0.01	Included with TSP
Total Particulate Matter (TSP)	0.01	<0.01
Sulfur Dioxide (SO <sub>2</sub> )	0.01	<0.01
Volatile Organic Compounds (VOC)	15.00	4.25

*PM<sub>10</sub> is a component of TSP.*

<b>Hazardous Air Pollutants</b>	<b>Potential Emissions</b>	<b>2015 Actual Emissions</b>
Methanol	5.0	2.64

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

**Title V Program Applicability Basis**

This facility has the potential to emit over 100 TPY each of CO, NO<sub>x</sub>, and VOC, and over 25 TPY of aggregate HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant and over 25 tons per year of aggregate HAPs, Union Carbide Corporation 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:	45CSR6	Open burning prohibited.
	45CSR7	Particulate matter and opacity limits for manufacturing sources.
	45CSR11	Standby plans for emergency episodes.
	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, Subparts F, G, H	Hazardous Organic NESHAP (HON)
	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>
None	N/A	

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**

**Equipment Changes**

With this renewal, the following equipment was added to the Emission Units Table:

- Two storage tanks were added via off-permit changes during the current permit term. These tanks, identified as T1502 (Tank 1502) and T3147 (Tank 3147) have no applicable requirements, therefore they only need to be added to the Emission Units Table.
- Vessel C170, which was included in the previous permit and identified in the Emission Units table as "not installed," was installed in 2013. The installation date in the Emission Units Table was updated.
- Tank 2011 was built in the 1950's and added to in service tanks in 2014. It has no applicable requirements. This tank was also added to the Emission Units Table.

**Non-Applicability Determinations**

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

- 40 C.F.R. 60, Subpart Kb – "Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984." Because Tanks 1501, 1502, and 3147 have a capacity greater than 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kpa), 40 C.F.R. §60.110b(b) exempts them from the requirements of 40 C.F.R. 60, Subpart Kb. Tanks 3101, 3113, 3122, 3124, and 3125 each have design capacities less than 75 m<sup>3</sup> and are not subject to 40 C.F.R. 60, Subpart Kb. 40 C.F.R 60, Subpart Kb does not apply to Tank 3149 because it has a design capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure less than 15.0 kPa (exempt per 40 C.F.R. §60.110b(b)).

- b. 45CSR§7-4.2 – Because the potential emissions of phosphoric acid from Tanks T2073, T2074, T2075, T2076, T2077, T4222, T4223, and T42223 are less than 0.1 lbs/hr per source and the aggregate for all sources is less than 100 pounds per year, 45CSR§7-10.6 exempts these tanks from the phosphoric acid concentration limits of 45CSR§7-4.2.
- c. 40 C.F.R. 63, Subpart FFFF – “National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing.” Tanks 3110 and 3119 and the Tank Truck Wagon (used for blending) are not batch process vents for the purposes of 40 C.F.R. 63, Subpart FFFF because the total uncontrolled HAP emissions are less than 200 lb/yr. There are no applicable requirements for the remainder of the units at this facility.
- d. 40 C.F.R. 64 – “Compliance Assurance Monitoring.” This is the second renewal for this facility. At the time of the first renewal, CAM was determined not to apply to this facility. There have been no changes since the previous renewal that would have changed this determination.
- e. 40 C.F.R. 82, Subpart F – Recycling and Emission Reduction: The Glutaraldehyde Plant has an industrial refrigeration machine. However, the refrigerant used is not a regulated Class 1 or Class 2 refrigerant, or a non-exempt substitute refrigerant.

**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: Wednesday, March 29, 2017  
Ending Date: Friday, April 28, 2017

**Point of Contact**

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

Rex Compston, P.E.  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone: 304/926-0499 ext. 1209 • Fax: 304/926-0478  
[Rex.E.Compston@wv.gov](mailto:Rex.E.Compston@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)**

Not applicable.