

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 July 9, 2012.

Permit Number: **R30-03900003-2012**
Application Received: **June 12, 2015**
Permittee: **Union Carbide Corporation**
(A Subsidiary of The Dow Chemical Company)
Facility Name: **South Charleston**
Mailing Address: **PO Box 8361**
South Charleston, WV 25303

Permit Action Number: *SM01* Revised: *November 6, 2015*

Physical Location: South Charleston, Kanawha County, West Virginia
UTM Coordinates: 439.67 km Easting • 4,246.72 km Northing • Zone 17
Directions: I-64 West and take the Montrose Exit. Come down the road towards the river and proceed straight through the traffic light across MacCorkle Avenue directly into the South Charleston Facility.

Facility Description

Dow's Union Carbide facility produces a variety of specialty chemicals under SIC #2869. Their business units are grouped into the following classes:

Process

End Use

Polyvinyl Acetate

An intermediate that is used as chewing gum base

Specialty Surfactants

TRITON™ - Hard Surface Metal Cleaners, Emulsion Polymerization, Paints, and Coatings, Rinse Aids, Textile Processing, Degreasers, Industrial Laundry Applications, Car Wash Applications and Personal Care Applications

Oxide Adducts	The Oxide Adducts unit produces various Polyether Polyols used in surfactants, brake fluids, hydraulic and metal working fluids.
Chemical Mixing	Miscellaneous organic chemicals (e.g. mixing and blending of organic chemical raw materials with other substances)
Energy Systems & Pipeline/Environmental Operations	Site Utilities – e.g. steam, plant air/nitrogen, etc. Operations include water treatment plant, waste water flume/sump system, and ethylene oxide distribution.
Remediation Operations	Soil and groundwater corrective action
Infrastructure Operations	Maintenance Operations and Bulk Shipping/Receiving of raw materials and products

This modification incorporates changes made in R13-1517C and R13-1517D, and incorporates permit conditions from R13-3025B to this permit. Additionally, permit conditions were added to incorporate changes made to 40CFR63, Subpart PPP “National Emission Standards for Hazardous Air Pollutants from Polyether Polyols Production” for pressure relief devices. These changes were published by the US EPA on March 24, 2014 and become effective on March 27, 2017.

Emissions Summary

With this modification, the following emissions will increase:

Pollutant	Change in PTE (TPY)
NO _x	+0.01
CO	+0.01
SO ₂	+0.02
PM	+0.01
VOC	+1.24
Hexane	+0.23
Benzene	+0.42
Total HAPs	+0.87

Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit over 100 tons per year of VOCs, over 100 tons per year of NO_x, over 100 tons/yr of CO and PM₁₀, over 100 tons per year of SO₂, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs. Due to this facility's potential to emit over 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 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: 45CSR6 Open burning prohibited.

45CSR13	NSR permitting.
45CSR30	Operating permit requirement.
45CSR34	Incorporation of MACT pursuant to 40CFR63
40CFR63	Subpart PPP – Polyether Polyols Production National Emission Standards for Hazardous Air Pollutants.

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 following permits are related to this modification:

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (if any)
R13-1517D	5/18/2015	
R13-3025B	5/26/2015	

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

R13-1517C and R13-1517D

R13-1517C was issued on March 27, 2015. This permit was revised to route Tank 8382 to the Specialty Surfactants Plant water scrubber and to update tank capacities. R13-1517D (issued on May 18, 2015) updated and corrected discrepancies from R13-1517C. The changes made to this Title V permit as a result of these two NSR permit changes are as follows:

- The Emission Units Table was updated as follows:
 - Tank 8330's Emission Point ID was changed from "E-1081-3" to "T8330", and Control Device C8110 is no longer listed as a control device for this tank. There are no emissions of regulated pollutants from Tank 8330. The vent from Tank 8330 is not routed to a control device.
 - C8130 was added as an additional control device for Tank 8340.
 - Tank 8382's Emission Point ID was changed from "T8382" to "E-1081-3", and C8130 was added as a control device for this tank.
 - The Emission Unit Description for "Bin 8701" was changed to "Bin 8702", and the Emission Unit ID was changed from "8701" to "B8702".
- Emission Point IDs T-8517 and T-8330 were added to condition 5.1.1. T-8517 was inadvertently left out of the permit, and T-8330 is a new emission point ID.

- Also, removed emission point ID T-8382 since this tank is vented through control device C8130 and emission point ID E-1081-3.

R13-3025, R13-3025A, and R13-3025B

R13-3025 was issued on June 11, 2013. R13-3025A was issued on February 6, 2015. R13-3025B was issued on May 26, 2015. These three NSR permitting actions were not previously incorporated into this Title V permit. These permitting actions were intended to address the Vapor Extraction System (Emission Unit ID: MI2VE), which was installed in 2014. As a result of these permitting actions, the following changes were made to this Title V permit to incorporate the latest version, R13-3025B:

- The Extraction System (Emission Unit ID: MI2VE) was added to the Emission Units Table.
- The citation for Condition 11.1.8, which addresses Operation and Maintenance of Air Pollution Control Equipment, was updated to include a reference to condition 4.1.7 of R13-3025B.
- Condition 11.1.9 was added requiring the Vapor Extraction System (MI2VE) to be routed to the Catalytic Oxidizer (MI2CO). This condition references condition 4.1.1 of R13-3025B.
- Condition 11.1.10 lists criteria pollutant emission limits for the Catalytic Oxidizer (MI2CO). This condition references condition 4.1.2 of R13-3025B, which streamlines requirements from 45CSR§6-4.1.
- Condition 11.1.11 lists HAP emission limits for the Catalytic Oxidizer (MI2CO). This condition references condition 4.1.3 of R13-3025B.
- Condition 11.1.12 requires the catalytic oxidizer to be designed, operated and maintained so as to reduce emissions in accordance with the emission limits specified in conditions 11.1.10 and 11.1.11. After the initial performance test was performed, the minimum temperature was determined to be 650°F. This condition references condition 4.1.4 of R13-3025B.
- Condition 11.1.13 lists visible emission limits for the Catalytic Oxidizer (MI2CO). This condition references condition 4.1.5 of R13-3025B and 45CSR§§6-4.3 and 4.4.
- Condition 11.1.14 requires the catalyst to be replaced in accordance with manufacturer specifications. This condition references condition 4.1.6 of R13-3025B.
- Condition 11.2.4 requires Method 22 visible emissions testing to determine compliance with condition 11.1.13. This condition references condition 4.2.2 of R13-3025B.
- The citation for Condition 11.3.1, which addresses Record of Monitoring, was updated to include a reference to condition 4.3.1 of R13-3025B.
- The citation for Condition 11.3.2, which addresses Record of Maintenance of Air Pollution Control Equipment, was updated to include a reference to condition 4.3.2 of R13-3025B.
- The citation for Condition 11.3.3, which addresses Record of Malfunctions of Air Pollution Control Equipment, was updated to include a reference to condition 4.3.3 of R13-3025B.
- Condition 11.3.6 lists recordkeeping requirements for the electric catalytic oxidizer. This condition references condition 4.3.4 of R13-3025B.
- Condition 11.3.7 requires records of all visual emission observations pursuant to the monitoring required under condition 11.2.5., including any corrective action taken. This condition references condition 4.3.5 of R13-3025B.
- The citation for Condition 11.4.1, which addresses semiannual monitoring reports, was updated to include a reference to condition 4.4.1 of R13-3025B.

40CFR63, Subpart PPP

The following permit conditions were added to incorporate changes made to 40CFR63, Subpart PPP “National Emission Standards for Hazardous Air Pollutants from Polyether Polyols Production” regarding the addition of requirements for pressure relief devices. These changes were published by the US EPA on March 24, 2014 and become effective on March 27, 2017:

- Conditions 5.1.16 and 7.1.17 were added to include operating requirements for pressure relief devices; and requiring installation of a monitoring system for all pressure relief devices in organic HAP service. The monitoring device must identify the pressure release, record the time and duration of each release, and notify the operator of the release. These conditions reference 40CFR§§63.1434(1), (2), and(3).
- Conditions 5.4.11 and 7.4.2 were added listing recordkeeping requirements for pressure relief devices in organic HAP service subject to conditions 5.1.16 and 7.1.17. These conditions reference 40CFR§63.1439(d)(10)(v).

- Conditions 5.5.9, 5.5.10, 7.5.6, and 7.5.7 address Notification of Compliance Status requirements for the pressure relief devices. These conditions reference 40CFR§§63.1439(e)(5) and (e)(5)(viii).

Non-Applicability Determinations

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

45CSR21—To Prevent and Control Air Pollution from The Emission of Volatile Organic Compounds: Emissions from sources listed in 45CSR§21-40.1.d shall not be included in the determination of maximum theoretical emissions for a facility (45CSR§21-40.1). Incinerators having a destruction efficiency of 95% or greater are included in the sources listed in section 45CSR§21-40.1.d. Therefore, MI2CO is not included in the determination of maximum theoretical emissions.

45CSR27—To Prevent and Control The Emissions of Toxic Air Pollutants: WVDAQ provided a non-applicability determination for 45CSR27 regarding the installation of the Vapor Extraction System (MI2VE) in an e-mail from Steve Pursley of WVDAQ to Freddie Sizemore of UCC dated January 21, 2010.

40CFR61, Subpart V—National Emission Standards for Equipment Leaks (Fugitive Emission Sources): The permittee is not subject to this subpart because they are not subject to a specific subpart in 40CFR61.

40CFR61, Subpart FF—National Emissions Standards for Benzene Waste Operations: MI2VE is not subject to this subpart. Waste that is in the form of gases or vapors that is emitted from process fluids is exempt from the requirements of this subpart (40 C.F.R. §61.340(c)(1)).

40CFR63, Subpart GGGGG—National Emission Standards for Hazardous Air Pollutants: Site Remediation: According to the application, the Vapor Extraction System (MI2VE) activities are conducted under RCRA corrective action program. The facility therefore qualifies for an exemption in accordance with 40 C.F.R. § 63.7881(b)(3).

40CFR64—Compliance Assurance Monitoring: Pre-control device emissions from MI2VE are less than major source thresholds, therefore CAM does not apply to MI2VE in accordance with 40CFR§64.2(a)(3).

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: Monday, September 21, 2015
Ending Date: Wednesday, October 21, 2015

Point of Contact

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

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Division of Air Quality
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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)

In a letter dated October 15, 2015, the permittee requested revisions to the language in conditions 5.1.16 and 7.1.17. The permittee requested clarifications that the language in these conditions were not effective until March 27, 2017. The conditions were revised as the permittee requested.