

Fact Sheet



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

This Fact Sheet serves to address the changes specific to this Minor 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: **March 14, 2016**
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: *MM03* Revised: *July 26, 2016*

Physical Location: South Charleston, Kanawha County, West Virginia
UTM Coordinates: 440.026 km Easting • 4,246.927 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

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

The acid-washing procedure described below to clean the scaling from the packed-bed scrubber (A42PBS) was formally incorporated into the updated permit (R13-2840B) as part of the scrubber's routine maintenance program. This minor modification incorporates the R13-2840B changes.

During the acid-washing process, the pH of the system must be allowed to go acidic. This is done by running only process vapor and stopping the addition of caustic. This process normally takes about 4-5 hours each month. (Six hours per month is allowed in the updated permit.) During acid-washing, the procedure is to manually blow down water from the scrubber so some of the acidity goes to the process sewer. The acidic solution cleans the scaling from the system. Once the process is complete, caustic is re-introduced and the system returns to normal operation within a matter of a few minutes.

Potential HCl Emissions Increase (Resulting from Acid Washing Maintenance Activity)

(1) Total HCl created during acid washing:	6.95	lb/hr
Maximum duration of acid wash activity:	6	hr
Total HCl created over the 6-hr period:	41.7	lb
(2) Total HCl in Scrubber System and from blow-down:	4.1	lb
Total potential emissions (41.7 lb - 4.1 lb):	37.65	lb
Total potential emissions [37.65 lb x (12 times/yr)/(2000lb/ton)]:	0.23	ton/yr

(1) Assumes maximum process vapor contaminant concentrations and design maximum process flowrate.

(2) Amount of HCl manually blown down from the scrubber system = 4.1 lb.

Emissions Summary

With this modification, HCl emissions are estimated to increase by 0.23 tons per year.

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 NOx, 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:	45CSR13	NSR permitting.
	45CSR30	Operating permit requirement.

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 (<i>if any</i>)
R13-2840B	5/20/2016	

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

R13-2840B

R13-2840B was issued on May 20, 2016. This permit was revised to allow acid-washing of packed bed scrubber A42PBS. The changes made to this Title V permit are as follows:

- 1) Condition 11.1.15 allows for scrubber maintenance (acid-washing) to be conducted no more than 12 times per year and no more than 6 hours per cleaning event.
- 2) Condition 11.1.16 limits the maximum amount of HCl emissions due to scrubber maintenance (acid-washing) to not exceed 37.65 pounds per event and 0.23 tons per year.
- 3) Condition 11.1.4 includes the increase of HCl emissions due to the acid washing. This also includes a corresponding increase in HAP emissions.
- 4) Exceptions have been added to Condition 11.1.6 to allow for scrubber maintenance (acid-washing).
- 5) The measurement of pH of the scrubber liquid in Condition 11.2.3 has been revised to exclude measurements during times when scrubber maintenance (acid-washing) is being performed.
- 6) The recordkeeping provision of 11.3.5.2 has been revised to exclude measurements during times when scrubber maintenance (acid-washing) is being performed.

- 7) Condition 11.3.8 has been added to require recordkeeping to demonstrate compliance with Conditions 11.1.15 and 11.1.16 that show the number of times and duration of scrubber maintenance (acid-washing) activities.
- 8) Miscellaneous changes include updating the table of contents, correcting the UTM Coordinates, identifying the types of pollutants in Conditions 11.1.3 and 11.1.4, and updating the R13-2840B Permit in Section 1.2.
- 9) Condition 14.2.1.b has been revised to not require pH monitoring during acid-washing maintenance activities.
- 10) Condition 14.3.2 has been revised to identify that Condition 11.1.4 specifies the HCl limits.

Non-Applicability Determinations

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

N/A

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: N/A

Ending Date: N/A

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)

N/A