

Fact Sheet



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

Permit Number: **R30-03900682-2025**
Application Received: **June 8, 2022**
Plant Identification Number: **03-054-03900682**
Permittee: **Specialty Products US, LLC**
Facility Name: **Institute Facility**
Mailing Address: **P.O. Box 1006, Institute, WV 25112**

Revised: N/A

Physical Location:	Institute, Kanawha County, West Virginia
UTM Coordinates:	432.189 km Easting • 4248.754 km Northing • Zone 17
Directions:	From Charleston take I-64 west toward Huntington. Turn right at Institute Exit. Proceed west approximately 0.5 miles on Route 25. The facility is located on the left.

Facility Description

Polyox WSR® is a water-soluble polymer used in pharmaceuticals, personal care products, adhesive, and flocculation markets. The Polyox WSR® unit manufactures polyethylene oxide (PEO) by polymerizing ethylene oxide. It is manufactured by reacting various chemicals to form a solid in the presence of a diluent. The POLYOX® solids are packaged for worldwide distribution. The POLYOX® Plant uses a flare, a vent scrubber, and a baghouse to control emissions. SIC: 2869

Emissions Summary

Facility-Wide Emissions [Tons per Year]		
Regulated Pollutants	Potential Emissions	2023 Actual Emissions ¹
Carbon Monoxide (CO)	8.94	4.96
Nitrogen Oxides (NO _x)	1.65	0.91
Particulate Matter (PM _{2.5})	0.15	0.03
Particulate Matter (PM ₁₀)	0.15	0.03
Total Particulate Matter (TSP)	0.15	0.03
Sulfur Dioxide (SO ₂)	1.05	0.01
Volatile Organic Compounds (VOC)	620	50.80
Hazardous Air Pollutants	Potential Emissions	2023 Actual Emissions ¹
Acetonitrile	0.1	0.01
Ethylene Oxide	0.7	0.39
Propylene Oxide	0.2	0.05
Ethylene Glycol	0.01	0
Glycol Ethers	0.01	0
Isophorone	0.01	0
Methanol	<0.01	<0.01
Hexane	0.02	<0.01

(1) The Fact Sheet which accompanied the Draft Title V Permit included 2022 Actual Emissions because the 2023 Actual Emissions had not been submitted by Specialty Products US, LLC. This Fact Sheet which accompanies the Proposed Title V Permit has been updated with the 2023 Actual Emissions.

Title V Program Applicability Basis

The facility has the potential to emit 620 tons per year of VOC. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Specialty Products US, LLC 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.
	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 PPP	Polyether Polyols MACT
	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
	45CSR27	Best Available Technology (BAT) for HAPs

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>)
R13-3404A	03/08/2023	

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

This is the first renewal for this facility under Specialty Products US, LLC since they obtained ownership of Union Carbide Corporation's (03900005) Group 5 of 8 permit for Water Soluble Polymers on November 26, 2018 (see minor modification R30-03900682-2017 (MM01)). Specialty Products US, LLC also obtained ownership of Union Carbide Corporation's (03900005) Group 4 of 8 permit for Glutaraldehyde. Group 4 of 8 for Glutaraldehyde was renamed Specialty Products US, LLC (Group 1 of 2) and Group 5 of 8 for Water Soluble Polymers was renamed Specialty Products US, LLC (Group 2 of 2). Specialty Products US, LLC (Group 1 of 2) for Glutaraldehyde was sold and the permit was transferred to MC (US) 3 LLC (03900734) on April 21, 2022. Since there are no longer two separate Title V permits for Specialty Products US, LLC, the Group 2 of 2 naming was not included on this renewal.

The following changes were made as part of this Title V renewal:

Changes Included in the Draft Permit

- **Section 1.0**
 - Permit R13-0171E was consolidated into permit R13-3404A, and this has been reflected throughout the permit.
 - The word “Flare” was added before A221 in the control device column for Emission Unit IDs T4905, T4906, T4907, and T4998 for consistency with the rest of the Table.
 - The word “Baghouse” was added to the control device column for Emission Unit IDs L6DB and D230B.
- **Section 2.0 and 3.0 – Title V Boilerplate**
 - The Title V boilerplate was updated for conditions 2.1.3, 2.11.4, 2.17, 2.22.1, 3.5.3, 3.5.4, 3.5.7, 3.5.8.a.1, and 3.5.8.a.2.
- **Former Section 4.0 – which was a Reserved section, has been removed from the permit.**
- **Former Section 5.0 – Now Section 4.0**
 - Due to changing from section 5.0 to 4.0, the cross references throughout the section have been changed as well.
 - Condition 4.1.1 was changed with new language from 40 C.F.R. §63.1426(a)
 - “Group 1” has been removed from conditions 4.1.1, 4.2.1, 4.4.1, 4.4.2, and 4.5.3 because there are no Group 1 or 2 designations for epoxide units in 40 C.F.R. 63 Subpart PPP.
 - In conditions 4.1.2, 4.2.2, 4.4.3, & 4.5.4, “Vessel 401 Tails” has been changed to “C461 Tails” for better clarification at the request of the permittee.
 - The table within condition 4.1.15 has been updated to reflect the changes made to the table in condition 5.1.1 of R13-3404A.
 - Condition 4.3.7 was added to include the requirements from 40 C.F.R. §63.1437(c).
 - Added condition 4.4.10 which is condition 5.4.4 from R13-3404A.
 - Conditions 4.4.11 and 4.4.12 contain record keeping requirements to demonstrate compliance with the ethylene oxide emission limits specified in table 4.1.14. These conditions have been updated to remove record keeping for emission points 230V and 230T. Emission Point 230V no longer has emissions of ethylene oxide and its ethylene oxide emission limits were removed from table 4.1.14 in previous permit modification R30-03900682-2017 (MM01). Emission Point 230T was removed from service in previous permit renewal R30-03900005-2017. Conditions 4.4.11 and 4.4.12 have also been updated so that the permittee is now required to calculate and maintain records of ethylene oxide emissions instead of only being required to calculate these emissions upon request of the Director.
 - Added condition 4.5.7 which is condition 4.5.2 from R13-3404A.

- Former condition 5.1.21 was deleted as it was not included in R13-3404A.

- Dryer V302 has been removed from the list of process vents subject to 40 C.F.R. 63 Subpart PPP in conditions 4.1.1, 4.2.1, 4.4.1, 4.4.2, and 4.5.3 based on the information submitted in Specialty Products US, LLC's Supplemental Notice of Compliance Status dated August 31, 2023.
 - 40 C.F.R. §63.1420(d)(3) provides the following exclusion:
 - (d) **Processes excluded from the affected source.** The processes specified in paragraphs (d)(1) through (3) of this section are not part of the affected source and are not subject to the requirements of both this subpart and subpart A of this part.
 1. Research and development facilities.
 2. Solvent reclamation, recovery, or recycling operations at hazardous waste treatment, storage, and disposal facilities (TSDF) requiring a permit under 40 CFR part 270 that are not part of a PMPU to which this subpart applies.
 3. Reactions or processing that occur after the epoxide polymerization is complete after all catalyst removal steps, if any, are complete.

Epoxide polymerization occurs in the reactors resulting in a conversion of ethylene oxide liquid to a solid product. At this point, polymerization is complete. The solid product is dried after catalyst removal steps. Therefore, the atmospheric vent (2300) from the drying operation (V302) that occurs afterwards meets the exclusion under 40 C.F.R. §63.1420(d)(3) and is not an affected source subject to Subpart PPP.

Changes Included in the Proposed Permit

- **Section 3.0**
 - Citations for conditions 3.1.6 and 3.3.1 were updated to match the current version of the WV Code.
 - Added the following sentence to condition 3.3.1.b: "If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit shall be revised in accordance with 45CSR§30-6.4 or 45CSR§30-6.5 as applicable."
 - Condition 3.5.11 was removed because 45CSR§21-9.3 has been removed from 45CSR21.

- **Section 4.0**
 - Condition 4.1.11 was removed because 45CSR§7-9.1 was removed from 45CSR7.
 - In condition 4.1.15, the reference to 45CSR§10-5.1 was removed from the citation because the vent stream combusted in the flare is not a refinery process gas stream and is not a process gas stream that contains hydrogen sulfide in a concentration greater than 50 grains per 100 cubic feet of gas.

- In condition 4.1.22, “45CSR34 and 40 C.F.R. §§63.6(e)(1) and (2)” were removed from the citation.
- In condition 4.4.7, the following sentence was added to the end of the condition in order to specify a frequency of visual inspections for control devices E221A and E707: “Control equipment E221A and E707 shall have an external visual equipment inspection and evaluation no less than annually to look at the physical condition of the equipment and evaluate the need for corrective action.”
- In condition 4.5.4.1, the following sentence was added to incorporate the revisions to the HON MACT that were effective on May 16, 2024: “Include the identification of the treatment process, the parameter that was out of range, and the date the parameter was out of range.”

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).” As specified under 40 C.F.R. §63.2338(c)(1), storage tanks, transfer racks, transport vehicles, containers, and equipment leak components that are part of an affected source under another 40 C.F.R. part 63 national emission standards for hazardous air pollutants (NESHAP) are excluded from the affected source under 40 C.F.R. 63, Subpart EEEE. All storage tanks, transfer racks, transport vehicles, containers, and equipment leak components that would be subject to 40 C.F.R. 63, Subpart EEEE in the POLYOX™ WSR Plant are part of an affected source under 40 C.F.R. 63, Subpart PPP, therefore, this equipment is not subject to 40 C.F.R. 63, Subpart EEEE.
- b. 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. All tanks at this facility are not subject to Kb because they were built before July 23, 1984 and/or have a capacity less than 75 m³.

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Draft Comment Period (Public)

Beginning Date: February 9, 2024

Ending Date: March 29, 2024

Proposed Comment Period (EPA)

Beginning Date: December 20, 2024

Ending Date: February 3, 2025

Point of Contact

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

Nikki B. Moats
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
nikki.b.moats@wv.gov
304/926-0499 ext. 41282

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)

A combined public notice for the Draft Title V Permit, public meeting, and public hearing was published in *The Charleston Gazette-Mail* on Friday, February 9, 2024. The in-person public meeting was held on Monday, March 11, 2024. The virtual public hearing was held on Tuesday, March 19, 2024. The public comment period ended on March 29, 2024, ten days after the virtual public hearing, pursuant to 45CSR§30-6.8.c.2.

The DAQ received written comments during the public comment period (February 9, 2024 to March 29, 2024, 49 days total) and oral comments during the March 19, 2024 virtual public hearing. Pursuant to §45-30-6.8.e, all comments received during the public comment period and during the public hearing have been reviewed and are addressed in the Response to Public Comments for R30-03900682-2025 dated December 20, 2024.

Changes incorporated into the Proposed Title V permit are specified in the Determinations and Justifications Section of this Title V Fact Sheet.