Fact Sheet

Final Rule: Air Toxics Standards for Polyether Polyols Production

Summary of Action

- On March 13, 2026, U.S. Environmental Protection Agency (EPA) finalized amendments to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Polyether Polyols (PEPO) Production.
  - The final rule revises maximum achievable control technology (MACT) standards, establishes ethylene oxide (EtO)-specific standards, and modifies other requirements.
- These revisions will achieve meaningful emission reductions without imposing burdensome compliance regulations on the 23 PEPO facilities subject to the NESHAP.
- This final action fulfills EPA's technology review requirement pursuant to Clean Air Act (CAA) section 112(d)(6) and the agency's commitment to reconsider the 2014 PEPO NESHAP.
- EPA estimates that the final rule will reduce hazardous air pollutant (HAP) emissions by approximately 97 tons per year (tpy), including approximately 12 tpy of EtO, and excess HAP emissions from PEPO flares by an additional 12 tpy.

Revisions to the MACT Standards for PEPO Production

- The final rule updates the monitoring requirements for heat exchange systems to require a more sensitive method (the Modified El Paso Method); lowers the MACT control thresholds for batch process vents and storage vessels; updates the requirements for internal floating roof storage vessels; and lowers the definition of leaks for valve equipment.

EtO-Specific Standards

- The final rule establishes first-time EtO-specific emission standards for several process groups "in ethylene oxide service" throughout the PEPO process, including heat exchange systems, process vents, storage vessels, equipment leaks, and wastewater streams. This final rule includes revisions to the proposed definition of sources "in ethylene oxide service."
- Sources must monitor heat exchange systems monthly and repair leaks generally within 45 days.
- Sources must limit EtO emissions from each process vent and storage vessel by at least 99.9 weight percent (or to a concentration below 1 part per million by volume) or route those emissions to a properly operated flare.
  - The final rule includes additional options to reduce EtO process vent emissions (*i.e.*, meeting a combined vent limit of less than 100 lb/yr or using a specific pollution prevention technique (extended cookout)).
- To reduce equipment leaks of EtO, sources must monitor connectors quarterly, monitor valves and pumps monthly, and repair leaks generally within 15 days.
- Sources must limit EtO in each wastewater stream to a concentration below 1 part per million by weight or comply with certain existing control options, *e.g.,* steam stripping.
  - Wastewater streams that cumulatively contain less than 1 megagram (1.1 tons) per year of EtO are exempt.

Other Significant Amendments

- The final rule adds provisions for PEPO flares to ensure they always meet MACT standards, including during periods of emergency flaring; for pressure vessel monitoring to verify that no detectable emissions exist; and for closed vent systems to clarify that any bypass of an air pollution control device is a violation.

  - EPA is revising the standards for surge control vessels and bottoms receivers to align with process vent standards. EPA is expanding the definition of "epoxide" and the list of HAP for the PEPO NESHAP to include butylene oxide. EPA is revising the definition of the affected source to include certain post-reaction processes such as solvent removal and purification.
- EPA is requiring five-year performance testing for process vent control devices.
- EPA is finalizing a new MACT standard for transfer operations to require the use of a vapor balance system or otherwise reduce emissions, if loading operations exceed a certain threshold.
- EPA is finalizing work practice standards for certain activities that have appropriate alternatives, including work practice standards for maintenance vents and equipment openings, for storage vessel degassing, and for routine storage vessel maintenance.

Economic Analysis

- EPA's economic analysis for the final rule estimates overall costs to industry for the time period 2026-2045 to be approximately $135 million at a three percent discount rate or $107 million at a seven percent discount rate. The annual costs are $9.10 million at a three percent discount rate or $10.1 million at a seven percent discount rate. These costs include savings for product recovery. All costs are in 2024 dollars, discounted to 2025.

Background

- PEPO are chemical products used to make lubricants, adhesives, sealants, cosmetics, pharmaceuticals, soaps, and as feedstock for polyurethanes production.
- CAA section 112 requires EPA to review and revise air toxics standards as necessary every eight years, considering developments in practices, processes, and control technologies.
- On June 1, 1999, EPA issued the original PEPO NESHAP that imposed MACT standards and regulated EtO under the broader umbrellas of organic HAP and epoxide HAP.
- In 2014, EPA conducted a residual risk and technology review (RTR) of the PEPO NESHAP and concluded that the MACT standards provided an ample margin of safety. EPA also finalized revisions to address emissions during periods of startup, shutdown, and malfunction and to require electronic reporting of performance test results.
  - On August 26, 2014, EPA granted a petition for reconsideration on the RTR.
- In December 2024, EPA proposed revisions to the PEPO NESHAP and provided an 81-day public comment period.

More Information

- For more information on this action, please visit our website: https://www.epa.gov/stationary-sources-air-pollution/polyether-polyols-production-national-emission-standards-hazardous.
- This final action and other background information are also available online at https://www.regulations.gov/. Supporting materials for this final action can be accessed using Docket ID No. EPA-HQ-OAR-2023-0282.