

**Ethylene Oxide**  
**Environmental Justice Information for PPDC**  
**Office of Pesticides Programs**

**Brief Background on Ethylene Oxide (EtO) under EPA's Office of Pesticide Programs**

EtO can be used as a pesticide to sterilize some medical devices (like implants and surgical equipment) which cannot be sterilized using alternative methods such as steam or radiation due to lack of compatibility with certain materials. EtO is also used to sterilize some spices, certain dried herbs, and dried vegetables at commercial sterilization facilities in order to control food-borne pathogens such as Salmonella and Escherichia coli.

EPA recently completed a new draft risk assessment to understand how people are impacted when EtO is used to sterilize items. This analysis showed, in particular, elevated risks for workers who spend an entire 35-year career in the sterilization setting and has informed EPA's proposal of a comprehensive set of new protective measures to reduce risk, including termination of certain uses, use rate reduction, engineering controls, personal protective equipment, and continuous real-time monitoring inside of sterilization facilities. On April 11, 2023, EPA proposed a broad set of new protections under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) that will reduce risk for all workers who use EtO to sterilize items and for others who work, live, or go to school near sterilization facilities.

**EPA's Office of Pesticides Program takes into account Environmental Justice as part of Registration Review under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).**

EPA seeks to achieve environmental justice, the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, in the development, implementation, and enforcement of environmental laws, regulations, and policies. Throughout the registration review process, EPA has sought to include all communities and persons, including minority, low-income, and indigenous populations who may be disproportionately overburdened by the exposure to EtO.

**In the Proposed Interim Decision (PID), OPP relied on the environmental justice analysis from EPA's Office of Air and Radiation (OAR).**

OAR conducted an in-depth Environmental Justice analysis as part of the *National Emission Standards for Hazardous Air Pollutants (NESHAP): Ethylene Oxide Emissions Standards for Sterilization Facilities Residual Risk and Technology Review*. OAR examined the potential for the 97 facilities that were assessed to pose concerns to environmental justice (EJ) communities both in the baseline and under the control options considered in their proposal. Overall, the results of this proximity demographic analysis indicate that the percent of the population living within 10 km of the 97 facilities that is Hispanic or Latino is substantially higher than the national average, driven largely by the seven facilities in Puerto Rico. The baseline proximity analysis indicates that the proportion of other demographic groups living within 10 km of commercial sterilizers is closer to the national average. The baseline risk-based demographic analysis, which focuses on those specific locations that are expected to have higher cancer risks as identified by OAR (defined by OAR for the purpose of this analysis as cancer risks greater than or equal to 1-in-1 million, greater than or equal to 50-in-1 million, and greater than 100-in-1 million), suggests that African Americans are disproportionally represented at the higher risk levels. The post-

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control risk-based demographic analysis focuses on how the options considered in OAR's proposed regulatory action would affect the distribution of risks identified in the baseline. The post-control options from OAR's proposed rulemaking show a substantial reduction in the number of individuals at each risk level, as well as a significant reduction in the proportion of individuals that are African American that experience higher risk levels from facilities in this source category. OAR projects that the majority of the individuals that would remain at risk after implementation of the proposed standards are Hispanic or Latino, driven largely by the sterilization facilities in Puerto Rico. These three distinct but complementary analyses indicate the potential for EJ concerns associated with this source category in the baseline, as well as the substantial benefits OAR's proposed standards would have in reducing EtO emissions and associated health risks in communities with EJ concerns.

**OPP considers risks to workers to be part of the Environmental Justice analysis.**

OPP has identified risks to workers handling EtO or who may be exposed to EtO within the facilities where it is used. Because people tend to live and work within their community, individuals who would be employed in these facilities could be disproportionately drawn from the Hispanic or Latino communities, as identified by OAR, since many facilities are located in Puerto Rico. Additionally, according to the 2021 U.S. Bureau of Labor Statistics, people working in warehousing and storage, such as those who would be employed in these facilities, moving materials into and out of chambers for fumigation, could be disproportionately drawn from communities of concern. The national average of employed persons working in warehousing and storage are about 22% Black or African American and 36% Hispanic or Latino.

**OPP is seeking additional comments on Environmental Justice concerns as part of the public comment period for the PID, which ends on June 27, 2023.**

The Agency requests information on any other groups or segments of the population who, as a result of their proximity and exposure to pesticides, unique exposure pathway (e.g., as a result of cultural practices), location relative to physical infrastructure, exposure to multiple stressors and cumulative impacts, lower capacity to participate in decision making, or other factors, may have unusually high exposure to EtO compared to the general population or who may otherwise be disproportionately affected by the use of EtO as a pesticide.

**Links to more information**

<https://www.epa.gov/ingredients-used-pesticide-products/regulation-ethylene-oxide-eto-under-federal-insecticide>

[2023 Draft Human Health Risk Assessment Addendum \(pdf\)](#)

[2023 Proposed Interim Decision \(pdf\)](#)