

**Submitted May 9, 2024**

## **Comments Regarding the National Academy of Sciences Review of the Texas Commission on Environmental Quality's Proposed Ethylene Oxide Risk Factor and Analysis**

The following comments are being sent on behalf of the nonprofits Public Citizen and Liveable Arlington.

There are 60 petrochemical plants and eight medical sterilizing plants that produce or use ethylene-oxide (EtO) that neighbor and endanger 26 different communities.

According to the U.S. 2020 census, more than 1.1 million Texans, or roughly 4 percent of the state population, live within five miles of at least one of these facilities.

### **Medical Sterilizing Facilities in the DFW Area**

There are two medical sterilizing facilities in the DFW area where Liveable Arlington is located. [Sterigenics](#) and Isomedix Operations, a subsidiary of Steris, are less than 1 mile apart from each other in the Grand Prairie area, located in the mid cities just south of DFW airport.

Almost a quarter of a million residents and roughly 100 schools and childcare centers are within 5 miles of these two sterilizing operations.

Nearly 3/4 of the population that live within the 5 miles of these operations are people of color. This same population represents a greater concentration of people with low income and people with limited English language proficiency compared with the rest of the county.

The estimated air toxics cancer risk in this census tract with these two facilities is an additional 100 cases per 1 million people.

According to a 2022 AirToxScreen, EtO emissions contribute to **roughly 79 percent** of the overall cancer risk in this tract.

### **IRIS Assessment by the Environmental Protection Agency (EPA)**

In looking at the [Integrated Risk Information System \(IRIS\) assessment](#) the EPA released in 2016 for ethylene oxide, the agency initiated a deep dive into the potential health effects linked to this toxic gas.

The IRIS assessment involved a decade-long process to systematically review and assess toxicological and epidemiological evidence about the health risks of EtO and included a robust peer review process.

EtO is a known human carcinogen. Breathing this toxic chemical is associated with increased breast and lymphoid cancers. It is also a mutagenic carcinogen. Short term exposure can cause numerous health effects including damage to the brain and neurological systems.

The EPA assessment concluded that people who continuously inhale the chemical as adults face 30 times more cancer cases than the agency had previously thought. For those who are exposed since birth, the rate is 50 times more cancer cases.

## **Texas Commission on Environmental Quality's (TCEQ) Analysis of EtO**

Since 2017, the Texas Commission on Environmental Quality and its industry partners have been actively working to challenge the EPA's science on the harm of ethylene oxide.

In 2020, the industry-friendly Texas Commission on Environmental Quality, along with the American Chemistry Council (ACC) and the Huntsman Petrochemical, submitted a petition to the EPA claiming that the work of EPA scientists was suspect and pressed the EPA to support the adoption of a far less protective standard based on the Texas Commission's analysis.

To adopt such a standard would be unlawful, arbitrary, and inconsistent with EPA policies.

TCEQ is required by its own regulations and guidelines to adopt and use current IRIS values in assessing health risk per the Texas Administrative Codes § 350.73 and § 334.203.

However, the Texas state environmental agency has a troubling pattern of weakening standards to protect human health in Texas. Between 2007 and 2017, the agency rolled back the already weak protections in Texas for 45 toxic chemicals including arsenic, benzene, formaldehyde, and hexavalent chromium.

In March 2017, the TCEQ created a factor for EtO that was 65 times less protective than the IRIS value, based on animal data. During this determination, the state agency had reviewed and rejected a 2010 article regarding ethylene oxide by a Texas A&M industrial engineer, Valdez-Flores, due to its failure to capture cancer risk for all but the highest exposure groups. This and another article (Kirman and Hays) were rejected by the TCEQ due to its lack of consideration of breast cancer and other factors. These articles were both funded by the American Chemistry Council.

In August 2017, the American Chemistry Council again submitted comments to the TCEQ during a public comment request for information citing articles by Valdez-Flores and another by Kirman and Hays. The TCEQ then decided to contract with engineer Valdez-Flores, whose studies they had previously rejected, to now work for the agency on developing a new factor that was even less protective than the one created in March.

### **Rejection of TCEQ's Analysis**

Both Public Citizen and Liveable Arlington reject the analysis by the TCEQ regarding ethylene oxide. We fully support the EPA's analysis as the best available science to determine the health risks from this toxic chemical.

In June 2023, our organizations worked to strengthen the EtO sterilizer rule.

Seven Texas Congressional representatives signed a letter asking for the EtO sterilizer rules to actually be stronger than what EPA proposed. Six Texas state senators and twenty Texas state representatives also asked that the EPA sterilizer rule be even stronger than what the federal agency proposed. In that letter, we asked the EPA to also require fence line monitoring of all sites, include offsite warehouses within the rulemaking, to shorten the compliance and implementation timeline, and to include all major and area source commercial sterilizers in the final rule.

In regard to the EtO's weakening of the EPA's proposed standard, the analysis submitted by the TCEQ used non-transparent methods to cherry-pick data to diminish the health risks associated with ethylene oxide exposure. The work was also performed by those with major conflicts of interest. Former TCEQ toxicology head, Michael Honeycutt, who worked at the agency when its analysis was first developed in 2017, had also previously worked as a petrochemical lobbyist.

In June of 2019, TCEQ then proposed a risk factor for ethylene oxide that was 3500 times less protective than the IRIS value. After TCEQ was criticized by commenters that it did not account for the susceptibility of children to EtO, the agency revised it again to then make the factor 2000 times less protective than the IRIS value.

In its conclusions, the TCEQ has cited a flawed 149-page report which claims that the agency's proposed level of EtO is safe and thus not cancer inducing. The TCEQ wants EPA to ignore its own extensive internal and external peer-reviewed science and adopt the agency's lowered EtO cancer risk factor, 2000 times weaker than the EPA's proposed standard.

Again, we believe the TCEQ has cherry-picked its data where:

1. The TCEQ has failed to seek an external science review of its flawed proposal.
2. The TCEQ did not account for, or simply ignored, the negative effects this change would have on children.

Texas children and communities neighboring petrochemical companies that would be most affected by EtO are already highly vulnerable to other carcinogenic pollutants -- such as benzene and vinyl chloride. Many of these communities are located along the Texas Gulf Coast, including the Golden Triangle, Corpus Christi, and most of the industrial communities in the greater Houston Area.

3. The TCEQ's analysis does not account for vulnerable populations so the agency appears to basically be speculating that there is little to no risk of cancer or harm at much higher levels of exposure to EtO.
4. Additionally, TCEQ's suspect risk assessment uses a males-only occupational study based on the risk of lymphoid cancer to support its higher EtO value as safe.

The assessment excludes breast cancer as a significant and known risk of EtO exposure. It also ignores other negative health effects besides cancer, such as birth defects, severe reproductive problems, and respiratory tract irritation.

5. In terms of studying carcinogenic risks, the TCEQ has not conducted an epidemiologic study of EtO's health effects in any existing community where EtO is being produced nor has the agency asked the Texas Department of Health Services to assist in performing an epidemiologic study of EtO.
6. TCEQ appears to exclude environmental justice issues because such considerations are not addressed by the risk assessment.
7. TCEQ has ignored the cumulative risks since citizens are exposed to multiple air toxics at the same time living next to large petrochemical complexes such as those at Channelview and other Houston Ship Channel communities.

It should be noted that the TCEQ spent years in court trying to prevent the release of thousands of pages of documents it had relied on as the technical basis for its EtO analysis to other nonprofit organizations.

It also should be stated that during the development of TCEQ's EtO assessment, the Toxicology division leader, Michael Honeycutt, stated in reference to EtO that such "pollutants are not nearly as harmful as the evidence suggests." This is especially disconcerting since this agency official rarely visited impacted communities in Texas nor does he live in one.

One should also note that Michael Honeycutt, who had been at the agency since 1996, made his name fighting the EPA, challenging the limits the agency tried to place on the emissions of chemicals, particularly those released by the oil and gas industry.

The same toxicologist head had also implied ozone rules are unnecessary because "Americans likely spend at least 90 percent of their time indoors" and that particulate air pollution, which causes lung cancer and other diseases, can help people "live longer."

The TCEQ's desire to weaken ethylene oxide exposure standards is reflective of their already flawed air permitting system in Texas and highlights their pro-polluter tendencies, which do not protect public health effectively.

The EPA is our only hope to rein in this toxic industry in Texas. We appreciate the National Academy of Sciences analysis regarding these facts. Thank you.

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