

Ethylene Oxide in Willowbrook, IL

What is ethylene oxide (EtO)?

Ethylene oxide is a flammable, colorless gas used to make a range of products, including antifreeze, textiles, plastics, detergents and adhesives. EtO also is used to sterilize equipment and plastic devices that cannot be sterilized by steam, such as medical equipment.

About the Sterigenics facility

Sterigenics is a commercial sterilizer that uses EtO to sterilize medical equipment and other products. It has been operating in Building 1 (7775 Quincy Street) since 1984 and in Building II (830 Midway) since 1999. It is owned by Sterigenics International LLC, which operates nine EtO sterilization facilities in the United States. The facility currently operates under a Clean Air Act permit issued by Illinois EPA in 2015.

Why EPA is involved

EPA is addressing ethylene oxide at the Willowbrook facility based on the results of the latest National Air Toxics Assessment (NATA). NATA is the Agency's nationwide air toxics screening tool, designed to help EPA and state, local and tribal air agencies identify areas, pollutants or types of sources for further examination.

The 2014 NATA estimates that ethylene oxide significantly contributes to potential elevated cancer risks in some census tracts across the U.S. (less than 1 percent of the total number of tracts). These elevated risks are largely driven by an EPA risk value that was updated in late 2016.

NATA estimates long-term risks – those that may occur from breathing air containing elevated levels of air toxics continuously for many decades. It does not estimate short-term (acute) or intermediate risks.

EPA and Illinois EPA Actions in Willowbrook

U.S. EPA and Illinois EPA have worked with Sterigenics to reduce emissions from the facility. In June, Sterigenics submitted a construction permit application to Illinois EPA to install additional pollution controls. After review from the U.S. EPA and Illinois EPA, Illinois EPA issued the permit on June 26, 2018. Sterigenics finished installing additional pollution controls to capture ethylene oxide emissions on July 27, 2018. On September 20 and 21, 2018, Sterigenics conducted stack tests to determine the effectiveness of the pollution controls. The final stack test report was submitted on October 26, 2018. The report shows that emissions from the stacks at the facility have been significantly reduced since Sterigenics began operating with the additional pollution controls.

In mid-November, U.S. EPA began air monitoring to measure the ambient concentration of ethylene oxide in the commercial and residential areas surrounding the Sterigenics facility. U.S. EPA will collect an ambient air sample over a 24-hour period at several locations on an every-third-day schedule. The data will be posted on U.S. EPA's website within 21 days after sample collection: <https://www.epa.gov/il/sterigenics-willowbrook-facility>.

What are the next steps?

U.S. EPA and Illinois EPA will continue to work with the company to evaluate the possible need for additional action. A key step in this process will be an updated risk assessment to be conducted by U.S. EPA using the latest information on ethylene oxide emissions and ambient concentrations. U.S. EPA will coordinate with the Agency for Toxic Substances and Disease Registry (ATSDR) on the updated assessment and expects to issue a final report in 2019.

How can I submit questions?

Email your questions to: eto@epa.gov