

# FAQ

## Ethylene Oxide Air Emissions Centurion Medical Inc. 301 Catrell Dr, Howell, Michigan Frequently Asked Questions (FAQ)

These frequently asked questions have been compiled to answer questions about ethylene oxide emissions in a general sense, as well as specific questions related to the Centurion Medical Inc. (Centurion) facility.

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## GENERAL INFORMATION

### 1. What is ethylene oxide and what are its uses?

Ethylene oxide is a gas with many industrial uses. There are two key uses for ethylene oxide: 1) It is used to make other chemicals that produce many everyday products and 2) It is used to sterilize devices that can't be sterilized using steam, such as some medical and dental equipment. This is how Centurion uses ethylene oxide at their facility.

### 2. Is ethylene oxide naturally occurring?

Yes. In addition to its industrial uses, ethylene oxide also occurs naturally in our bodies from metabolizing food. We all have some ethylene oxide in our bodies. Exposures to ethylene oxide in the air we breathe can add to our natural levels.

### 3. Is ethylene oxide dangerous?

Yes. In the workplace, ethylene oxide needs to be managed so that it does not pose a fire or explosion risk, and to limit exposures to workers. As an outdoor air pollutant, it is designated by the U.S. Environmental Protection Agency (USEPA) as one of the 188 Hazardous Air Pollutants. At high enough levels of exposure, it can pose a cancer risk.

## HEALTH INFORMATION

### 4. How does the Michigan Department of Environment, Great Lakes and Energy (EGLE) regulate ethylene oxide in air emissions?

Since 1982, EGLE has regulated ethylene oxide in air emissions as a **probable** human carcinogen based on animal studies. In December 2016, the USEPA classified ethylene oxide as a **known** human carcinogen based on studies of workers. In order to help ensure that public health is protected, EGLE restricts air emissions of ethylene oxide and other air pollutants when it issues air permits to companies.

### 5. Can exposure to ethylene oxide cause immediate or acute health effects?

At very high levels in the air, ethylene oxide can cause immediate health effects, like headaches, dizziness, nausea, fatigue, and respiratory irritation. Based on the levels observed around Centurion, immediate health effects are unlikely to occur.

### 6. Can ethylene oxide cause cancer?

Yes. Based on occupational (workplace) studies in humans and in animal studies, prolonged high-level exposure to ethylene oxide increases the risks for developing lymphoid cancers (including multiple myeloma, leukemia, Hodgkin lymphoma, and non-Hodgkin lymphoma) and breast cancer in females.

### 7. How long does ethylene oxide stay in my body?

Ethylene oxide is removed from the body quickly. Almost 90 percent of ethylene oxide would be eliminated from the body in two hours.

**8. Is there a way to test my ethylene oxide exposure?**

While there are tests to estimate current contact with ethylene oxide, they would be accurate only for a very recent and high exposure. These tests would not be helpful in telling you about your risk for future health problems.

## CENTURION AND ETHYLENE OXIDE CONCERNS

**9. Does Centurion have a permit for their ethylene oxide emissions?**

Yes. Centurion's most recent [air permit](#) was issued in 2017. This permit requires the operation of air pollution control equipment to remove ethylene oxide before emissions are exhausted to the atmosphere.

NOTE: Air permits are issued prior to installation of the equipment and are good for the life of the equipment. Permits must be re-evaluated when certain changes are proposed for that equipment or if a company wished to install new equipment.

**10. Is Centurion operating within their permitted limits?**

In October 2019, Centurion conducted voluntary stack testing at the AQD's request, and the results indicate emissions from the stacks at Centurion are at or below permitted limits.

**11. What levels of ethylene oxide are in the air near Centurion?**

In April 2021, EGLE's Air Quality Division conducted a modeling study, which looked at the amounts of ethylene oxide from the initial air sampling using a computer model. As a result of this modeling study, we estimate that max annual average impact of 0.062 ug/m<sup>3</sup> micrograms per cubic meter of ethylene oxide in the outdoor air can be seen at the property line. For perspective, the USEPA has estimated that the average ethylene oxide level in the US is 0.0062 micrograms per cubic meter in outdoor air.

**12. Are the levels of ethylene oxide near Centurion high enough to cause noncancer health effects?**

No. The ethylene oxide levels do not pose a concern for short-term or long-term noncancer health effects, based on the Centurion emission estimates, EGLE modeling and air sampling done in the community to date. EGLE is planning for more air testing in the Spring and Summer of 2021 which will help evaluate the actual levels of ethylene oxide in the air.

## AIR MONITORING

**13. Will air sampling or monitoring be done at Centurion or the surrounding community?**

Yes. EGLE has conducted limited sampling of ethylene oxide in the air around Centurion. EGLE is planning to conduct further sampling. As test plans become available, they will be posted at [Michigan.gov/EGLECenturion](https://www.michigan.gov/EGLECenturion).

**14. Will the results of the sampling be shared with the public?**

Yes. Information about air sampling at Centurion can be found at [Michigan.gov/EGLECenturion](https://www.michigan.gov/EGLECenturion).

## WHAT IS EGLE DOING?

### 15. What are the next steps?

During EGLE's initial sampling investigation of Centurion, levels of ethylene oxide emissions associated with the facility were found to be higher than expected. The information collected prompted a larger and more in-depth investigation including air modeling and the need for additional air sampling. In addition, EGLE issued a Violation Notice to Centurion. The Violation Notice requires a response and a plan to return to compliance from Centurion.

Michigan's Environmental Justice Policy promotes the fair, non-discriminatory treatment and meaningful involvement of Michigan's residents regarding the development, implementation, and enforcement of environmental laws, regulations, and policies by this state. Fair, non-discriminatory treatment intends that no group of people, including racial, ethnic, or low-income populations, will bear a disproportionately greater burden resulting from environmental laws, regulations, policies, and decision-making.

Meaningful involvement of residents ensures an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health.

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