

**This fact sheet answers the most frequently asked health questions (FAQs) about phosgene oxime. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It is important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**HIGHLIGHTS: Phosgene oxime was developed as a chemical warfare agent. Only people working near where phosgene oxime has been stored are at risk of being exposed to this substance. Exposure to high levels of phosgene oxime vapors may cause severe lung damage, and even death. Contact with gaseous, liquid, or solid phosgene oxime may result in severe skin or eye damage. Phosgene oxime has been found in at least 1 of the 1,585 National Priorities List sites identified by the Environmental Protection Agency (EPA).**

### What is phosgene oxime?

Phosgene oxime is a manufactured chemical that was developed as a potential chemical warfare agent, but its use on the battlefield has never been documented. It has a disagreeable penetrating odor. Pure phosgene oxime is a colorless, crystalline solid; the munitions grade compound is a yellowish-brown liquid. Both the liquid and the solid can give off vapors at ambient temperatures.

### What happens to phosgene oxime when it enters the environment?

☐ When released to air, phosgene oxime will exist solely in the gas-phase. Phosgene oxime vapors are broken down in the atmosphere by reacting with substances commonly found in the air, but this is a very slow process. Phosgene oxime in the air may also react with moisture in clouds or rain and be broken down into other compounds.

☐ Phosgene oxime will react with water or be broken down into other products by bacteria. Some of the phosgene oxime that is not broken down may evaporate into air.

☐ Phosgene oxime will not stick to the soil. Small amounts may evaporate into air or travel below the soil surface and contaminate groundwater. Most of the phosgene oxime in soil will be broken down upon contact with moisture or be degraded by bacteria.

☐ Phosgene oxime does not accumulate in the food chain.

### How might I be exposed to phosgene oxime?

It is not likely that you would be exposed to phosgene oxime; it has never been known to have been used in chemical warfare.

### How can phosgene oxime affect my health?

Breathing phosgene oxime vapors can cause severe bronchitis and accumulation of fluid in the lungs. Skin contact with phosgene oxime will cause swelling and itching hives that can also result in immediate and painful skin damage. Eye contact may result in severe pain and conjunctivitis. Phosgene oxime is absorbed through the

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skin and eye; this can also result in pulmonary edema. Inhaling or directly contacting significant amounts of phosgene oxime can result in death.

We do not know what happens if you swallow phosgene oxime liquid or solid. However, animal studies indicate that if you did, you might suffer swelling and bleeding of the gastrointestinal tract.

The effects of long-term exposure to phosgene oxime in humans are not known.

We do not know if exposure to phosgene oxime might cause reproductive effects in humans.

### **How likely is phosgene oxime to cause cancer?**

The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have not classified phosgene oxime for carcinogenicity. There is no information to determine whether exposure to phosgene oxime might cause cancer.

### **How can phosgene oxime affect children?**

There are no studies on the health effects of children exposed to phosgene oxime. It is likely that the health effects seen in children exposed to phosgene oxime would be similar to the effects seen in adults. We do not know whether children differ from adults in their susceptibility to phosgene oxime.

We do not know if exposure to phosgene oxime would result in birth defects or other developmental effects in people and no information exist from animal studies.

### **How can families reduce the risk of exposure to phosgene oxime?**

Most families will not be exposed to phosgene oxime.

### **Is there a medical test to show whether I've been exposed to phosgene oxime?**

There are no tests to positively determine whether you have been exposed to phosgene oxime. If you suspect that you may have been exposed to phosgene oxime, a chest X-ray may be the quickest way to determine if your lungs have been damaged. This can be done in a hospital, clinic, or doctor's office that has an X-ray machine.

### **Has the federal government made recommendations to protect human health?**

No standards or recommendations are available for phosgene oxime.

**Where can I get more information?** For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs™ Internet address is <http://www.atsdr.cdc.gov/toxfaq.html>. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

