**BASF Chemical Emergency Medical Guidelines**

# Ethylene oxide ($[CH_2]_2O$) D 1

## Information and recommendations for patients

- **Patients exposed only to ethylene oxide gas do not pose a significant risk of secondary contamination. Patients whose clothing or skin is contaminated with ethylene oxide liquid or solution can secondarily contaminate rescue and medical personnel by direct contact or through off-gassing ethylene oxide.**
- **Ethylene oxide can produce CNS depression and immediate eye, skin, and respiratory tract irritation and may lead to seizures, coma, or respiratory paralysis. Signs of accumulation of fluid in the lungs (shortness of breath, cyanosis, expectoration, cough) may evolve 12 hours or more after exposure.**
- **There is no antidote to be administered to counteract the effects of ethylene oxide. Treatment consists of supportive measures.**

**Substance information**

Ethylene oxide ($[CH_2]_2O$), CAS 75-21-8
Synonyms: epoxyethane, ETO, oxirane
Ethylene oxide is a colorless gas at room temperature and a colorless liquid below 11°C (51°F, respectively). It is highly reactive and water soluble. Both the gas and liquid are potential fire and explosion hazards. Ethylene oxide has a sweet ether-like odor at air concentrations of 500 ppm and above. However, dangerous exposures may occur at levels too low to smell.
Ethylene oxide is an important industrial solvent, plasticizer, and chemical intermediate. Ethylene oxide is used in the sterilization of hospital supplies, foods, and cosmetics, as a fumigant for spices, tobacco, furs, bedding, etc., and in the manufacture of antifreeze and other chemicals. It reacts with strong acids, alkalis and oxidizers.

**What immediate health effects can result from exposure to ethylene oxide?**

Most exposures to ethylene oxide occur from breathing the gas. Exposure to small amounts can cause eye, nose, and throat irritation, and skin rash. More serious exposure can cause severe breathing difficulty, skin burns, weakness, twitching, convulsions, and coma. Severe breathing problems may develop for as long as 24 hours after exposure.

**Are any future health effects likely to occur?**

A single small exposure from which a person recovers quickly is not likely to cause delayed or long-term effects. Survivors of severe inhalation injury may suffer residual chronic lung disease.
Ethylene oxide may cause cancer of the blood in the case of high and long-term exposure.

## Follow-up instructions

Keep this page and take it with you to your next appointment. Follow only the instructions checked below.

( ) Call your doctor or the Emergency Department if you develop any unusual signs or symptoms within the next 24 hours, especially:
- coughing or wheezing
- difficulty breathing or shortness of breath
- increased pain or a discharge from exposed skin or eyes
- chest pain or tightness
- fever
- numbness or weakness in the arms or legs
- unexplained drowsiness, fatigue, headache
- stomach pain, vomiting, diarrhea

( ) No follow-up appointment is necessary unless you develop any of the symptoms listed above.

( ) Call for an appointment with Dr. _____ in the practice of _____ When you call for your appointment, please say that you were treated in the Emergency Department at _____ Hospital by _____ and were advised to be seen again in __ days.

( ) Return to the Emergency Department/_____ Clinic on (date) _____ at _____ am/pm for a follow-up examination.

( ) Do not perform vigorous physical activities for 1 to 2 days.

( ) You may resume everyday activities including driving and operating machinery.

( ) Do not return to work for __ days.

( ) You may return to work on a limited basis. See instructions below.

( ) Avoid exposure to cigarette smoke for 72 hours; smoke may worsen the condition of your lungs.

( ) Avoid drinking alcoholic beverages; alcohol may worsen your clinical conditions.

( ) Avoid taking the following medications: _____
_____

( ) You may continue taking the following medication(s) that your doctor(s) prescribed for you: _____
_____

( ) Other instructions: _____
_____

Signature of patient _____ Date _____
Signature of physician _____ Date _____

# References

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