Material Safety Data Sheet

1. Product and Company Identification

Product name : **Ethylene Oxide**

Chemical formula : C2H4O

Synonyms : Oxirane; 1,2-Epoxy ethane

Company : Specialty Gases of America, Inc
6055 Brent Dr.
Toledo, OH 43611

Telephone : 419-729-7732

Emergency : 800-424-9300

2. Composition/Information on Ingredients

Components	CAS Number	% Volume
Ethylene Oxide	75-21-8	99+%

3. Hazards Identification

Emergency Overview

Poisonous, flammable liquid and gas under pressure.
Cancer hazard and reproductive hazard.
Can form explosive mixtures with air.
Can cause eye and skin burns.
Can cause irritation of respiratory tract.
May cause nervous system damage and cataracts.
Symptoms of exposure may be delayed.

Potential Health Effects

Inhalation : Inhalation causes irritation of the respiratory tract. There may be stinging of the nose and throat, coughing, chest tightness, headache, nausea, vomiting, diarrhea, weakness, drowsiness, cyanosis, loss of coordination, convulsions, and coma. Central nervous system (CNS) depression and pulmonary edema may occur.

Eye contact : Burns. Liquid contact with the eye causes severe corneal injury.

Skin contact : Burns.

Ingestion : Not a primary route of entry.

Chronic Health Hazard : Allergic dermatitis, cataract formation, peripheral polyneuropathy, chromosome mutation, carcinogen.

4. First Aid Measures

General advice : None.

Eye contact : Immediately flush with copious amounts of water for at least 15 minutes.

Skin contact : Immediately flush with copious amounts of water for at least 15 minutes while removing contaminated clothing.

Ingestion	:	None.
Inhalation	:	Immediately remove victim to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration.

5. Fire-Fighting Measures

Suitable extinguishing media	:	Carbon dioxide, alcohol foam, or dry chemical.
Specific hazards	:	Cylinder rupture may occur under fire conditions. Severe when exposed to heat or flame. Vapors may travel a considerable distance to the source of ignition and flash back.
Special protective equipment for fire-fighters	:	Wear self contained breathing apparatus and full protective clothing. Keep fire exposed cylinders cool with water spray. If possible, stop the product flow.

6. Accidental Release Measures

Personal precautions	:	None.
Environmental precautions	:	None.
Methods for cleaning up	:	Evacuate and ventilate area. Remove all sources of ignition. Absorb small spills using a solid absorbent such as vermiculite.
Additional advice	:	None.

7. Handling and Storage

Handling

Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

Storage

Store in well ventilated areas. Stay away from oxidizers, combustible materials, and source of ignition or heat. Recommended storage in steel or stainless steel containers. Storage should be suitable for an OSHA Class 1A flammable liquid. Control storage – a maximum of 60 days is recommended.

8. Exposure Controls / Personal Protection

Engineering measures

Provide adequate general and local exhaust ventilation to maintain concentrations below exposure and flammable limits.

Personal protective equipment

Respiratory protection	:	In case of leakage, use self-contained breathing apparatus.
Hand protection	:	Impervious gloves.
Eye protection	:	Safety glasses. A safety shower and eyewash station should be readily available.
Skin and body protection	:	Coveralls, boots, and/or other resistant protective clothing.

9. Physical and Chemical Properties

Form	:	Gas.
Color	:	Colorless.
Odor	:	Sweet ether-like odor.
Vapor pressure	:	1095 mmHg

Vapor density	:	1.5 (Air = 1)
Boiling point	:	11 C
Water solubility	:	Miscible
Specific gravity	:	0.89 @ 0 C (H20 = 1)
Evaporation rate	:	Gas.

10. Stability and Reactivity

Stability	:	Stable under normal conditions.
Conditions to avoid	:	Storage in poorly ventilated areas. Storage near a heat source.
Materials to avoid	:	Oxidizing agents, acids, organic bases, amines, ammonia, and certain salts. Reacts explosively with certain alcohols or mercaptans. Reacts with HCl to form highly toxic ethylene chlorohydrin. Avoid copper, silver, magnesium, mercury, and their salts.
Hazardous decomposition products	:	Toxic carbon monoxide and ethylene chlorohydrin.

11. Toxicological Information

Toxicity Data

Lethal Concentration (LC50): 4350 ppm, rat 1 hour.

Acute Health Hazard

Ingestion	:	Not available.
Inhalation	:	Not available.
Skin	:	Not available.

12. Ecological Information

No adverse ecological effects are expected.

13. Disposal Considerations

Waste from residues / unused products	:	Dispose of non-refillable cylinders in accordance with federal, state and local regulations. Allow gas to vent slowly to atmosphere in an unconfined area or exhaust hood. If the cylinders are refillable type, return cylinders to supplier with any valve outlet plugs or caps secured and valve protection caps in place.
Contaminated packaging	:	Return cylinder to supplier.

14. Transport Information

DOT (US only)

Proper shipping name	:	Ethylene Oxide
Class	:	2.3, Hazard Zone D
UN/ID No.	:	UN1040
Labeling	:	Poison Gas, Flammable Gas

Further information

Cylinders should be transported in a secure upright position in a well ventilated truck.

15. Regulatory Information

OSHA Hazard Communication Standard (29 CFR 1910.1200) Hazard Class(es)

Material is listed in appendix A of 29 CFR 1910.119 as highly hazardous chemical.

TCSA

Material is listed in TSCA inventory.

SARA

The threshold planning quantity for material is 1,000 lbs.

Number in Annex 1 of DIR 67/548

Material is listed in annex 1.

16. Other Information

Prepared by : Specialty Gases of America, Inc.

For additional information, please visit our website at www.americangasgroup.com.