



MATERIAL SAFETY DATA SHEET - CALIBRATION CHECK GAS

PRODUCT NAME: ETHYLENE OXIDE (5 PPM – 200 PPM) IN NITROGEN

MSDS NO: 61

Version:3

Date: March, 2012

1. Chemical Product and Company Identification

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PRODUCT NAME: ETHYLENE OXIDE (5 PPM – 200 PPM) IN NITROGEN

CHEMICAL NAME: Ethylene Oxide in Nitrogen

COMMON NAMES/ SYNONYMS: None

TDG (Canada) CLASSIFICATION: 2.2

WHIMIS CLASSIFICATION: A

2. COMPOSITION/ INFORMATION ON INGREDIENTS

INGREDIENT	%VOLUME	PEL-OSHA	TLV-ACGIH	LD ₅₀ or LC ₅₀ Route/Species
Ethylene Oxide FORMULA: C ₂ H ₄ O	0.0005 to 0.02%	1 PPM	1 PPM	LC ₅₀ 800 PPM/ 4 hours (rat)
Nitrogen FORMULA: N ₂	Balance	Simple Asphyxiate	Simple Asphyxiate	N/A

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Release of this product may produce oxygen-deficient atmospheres (especially in confined spaces or other poorly ventilated environments); individuals in such atmospheres may be asphyxiated. Low concentrations of Ethylene Oxide can be irritating to eyes and upper respiratory system: inhalation of low levels of this gas may also cause nausea, vomiting, and numbing of the sense of smell. Additionally, Ethylene Oxide is potentially carcinogenic to humans.

ROUTE OF ENTRY:

Skin Contact No	Skin Absorption No	Eye Contact Yes	Inhalation Yes	Ingestion No
HEALTH EFFECTS: Exposure Limits Yes	Irritant Yes	Sensitization No	Reproductive Hazard Yes	Mutagen Yes

Carcinogenicity: --NTP: Yes IARC: Yes OSHA: Yes

EYE EFFECTS:

Over-exposure to the eyes may cause irritation (i.e. redness, stinging).

SKIN EFFECTS:

N/A.



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INGESTION EFFECTS:

Ingestion unlikely. Gas at room temperature.

INHALATION EFFECTS:

Due to the small size of this cylinder, no unusual health effects from over-exposure are anticipated under normal routine use. The most significant, acute effect associated with a release of this product would be for the potential development of oxygen-deficient atmospheres. If this product is released in a small poorly ventilated area, an oxygen-deficient environment may occur.

NFPA HAZARD CODES

Health: 1
Flammability: 0
Reactivity: 0

HMIS HAZARD CODES

Health: 2
Flammability: 0
Reactivity: 0

RATING SYSTEM

0= No Hazard
1= Slight Hazard
2= Moderate Hazard
3= Serious Hazard
4= Severe Hazard

4. FIRST AID MEASURES

EYES:

PERSONS WITH POTENTIAL EXPOSURE SHOULD NOT WEAR CONTACT LENSES. Flush contaminated eyes with copious quantities of water. Part eyelids to assure complete flushing. Continue for a minimum of 15 minutes. Seek immediate medical attention.

SKIN:

N/A

INGESTION:

Not required

INHALATION:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED THE SELF-CONTAINED BREATHING APPARATUS. Victims should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. If breathing has stopped administer artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

5. FIRE-FIGHTING MEASURES

These containers hold gas under pressure, with no liquid phase. If involved in a major fire, they should be sprayed with water to avoid pressure increases, otherwise pressures will rise and ultimately they may distort or burst to release the contents. The gases will not add significantly to the fire, but containers or fragments may be projected considerable distances - thereby hampering fire fighting efforts.

6. ACCIDENTAL RELEASE MEASURES

In terms of weight, these containers hold very little contents, such that any accidental release by puncturing etc. will be of no practical concern.

7. HANDLING AND STORAGE

Suck back of water into the container must be prevented. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Use only in well-ventilated areas. Do not heat cylinder by any means to increase rate of product from the cylinder. Do not allow the temperature where cylinders are stored to exceed 130°F (54°C).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Use adequate ventilation for extended use of gas.



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9. PHYSICAL AND CHEMICAL PROPERTIES

PARAMETER:	VALUE:
Physical state	: Gas
Evaporation point	: N/A
pH	: N/A
Odor and appearance	: Colorless, odorless gas

10. STABILITY AND REACTIVITY

Stable under normal conditions. Expected shelf life 12 months.

11. TOXICOLOGICAL INFORMATION

Due to the small size of this cylinder, no unusual toxicological damage is anticipated under normal use.

12. ECOLOGICAL INFORMATION

Due to the small size of this cylinder, no ecological damage caused by this product.

13. DISPOSAL INFORMATION

Do not discharge into any place where its accumulation could be dangerous. Used containers are acceptable for disposal in the normal waste stream as long as the cylinder is empty and valve removed or cylinder wall is punctured; but GASCO encourages the consumer to return cylinders.

14. TRANSPORT INFORMATION

	<u>United States DOT</u>	<u>Canada TDG</u>
PROPER SHIPPING NAME:	Compressed Gas N.O.S. (Ethylene Oxide in Nitrogen)	Compressed Gas N.O.S. (Ethylene Oxide in Nitrogen)
HAZARD CLASS:	2.2	2.2
IDENTIFICATION NUMBER:	UN1956	UN1956
SHIPPING LABEL:	NONFLAMMABLE GAS	NONFLAMMABLE GAS

15. REGULATORY INFORMATION

Ethylene Oxide is listed under the accident prevention provisions of section 112(r) of the Clean Air Act (CAA) with a threshold quantity (TQ) of 10,000 pounds.

16. OTHER INFORMATION

This MSDS has been prepared in accordance with the Chemicals (Hazard Information and Packaging for Supply (Amendment) Regulation 1996. The information is based on the best knowledge of GASCO, and its advisors and is given in good faith, but we cannot guarantee its accuracy, reliability or completeness and therefore disclaim any liability for loss or damage arising out of use of this data. Since conditions of use are outside the control of the Company and its advisors we disclaim any liability for loss or damage when the product is used for other purposes than it is intended.

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