



MATERIAL SAFETY DATA SHEET - CALIBRATION CHECK GAS

PRODUCT NAME: 1 PPM to 22.5% OXYGEN IN NITROGEN

MSDS NO: 1

Version: 4

Date: January 2006

1. Chemical Product and Company Identification

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PRODUCT NAME: OXYGEN IN NITROGEN
CHEMICAL NAME: Oxygen in Nitrogen
COMMON NAMES/ SYNONYMS: N/A
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 |
|-------------------------------------|----------------|-------------------|-------------------|---|
| Oxygen FORMULA: O ₂ | 0.001- 22.5 | N/A | N/A | N/A |
| Nitrogen FORMULA: N ₂ | 77.5 to 99.999 | Simple Asphyxiate | Simple Asphyxiate | Not Available |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Mixtures with less than 19.5% oxygen act as a simple asphyxiate. Effects may include headaches, dizziness and loss of consciousness. Elevated oxygen levels may result in cough and other pulmonary changes.

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: gas

ODOR: odorless

MAJOR HEALTH HAZARDS: difficulty breathing

PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat. May ignite combustibles.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation, changes in body temperature, nausea, vomiting, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, disorientation, hallucinations, mood swings, tingling sensation, pain in extremities, tremors, loss of coordination, lung congestion, convulsions, coma

LONG TERM EXPOSURE: chest pain

SKIN CONTACT:

SHORT TERM EXPOSURE: no information on significant adverse effects

LONG TERM EXPOSURE: no information on significant adverse effects

EYE CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: no information on significant adverse effects

INGESTION:

SHORT TERM EXPOSURE: ingestion of a gas is unlikely

LONG TERM EXPOSURE: ingestion of a gas is unlikely

INHALATION EFFECTS:

Note: Not to be used as breathing air!



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Air is nontoxic and necessary to support life. Inhalation of air in a high-pressure environment, such as underwater diving, caisson or hyperbaric chamber, can result in symptoms similar to overexposure to pure oxygen. These include tingling of fingers and toes, abnormal sensations, impaired coordination and confusion. Decompression sickness pains or "bends" are possible following rapid decompression.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

Other effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgement, depression of all sensations, emotional instability, and fatigue. As asphyxiation progresses, nausea, vomiting, prostration, and loss of consciousness may result, eventually leading to convulsions, coma, and death.

4. FIRST AID MEASURES

EYES:

N/A

SKIN:

N/A

INGESTION:

Not required.

INHALATION:

Note: Not to be used as breathing air!

Facilities or practices at which air is breathed in a high-pressure environment should be prepared to deal with illnesses associated with decompression (bends or caisson disease). Decompression equipment may be required.

5. FIRE-FIGHTING MEASURES

Note: High oxygen concentration vigorously accelerates combustion.

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 |

10. STABILITY AND REACTIVITY

Stable under normal conditions. Expected shelf life 24 months.

11. TOXICOLOGICAL INFORMATION

Compressed air is not intended for breathing use, since it's oxygen contents may be below that which supports life. Refer to individual data sheets on oxygen and nitrogen for their toxicological properties. Mixtures with less than 19.5% oxygen are inactive biologically and essentially nontoxic. The major hazard is that of oxygen deficiency due to displacement. Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

12. ECOLOGICAL INFORMATION

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. (Oxygen, Nitrogen) | Compressed Gas N.O.S. (Oxygen, Nitrogen) |
| HAZARD CLASS: | 2.2 | 2.2 |
| IDENTIFICATION NUMBER: | UN1956, UN1002 | UN1956, UN1002 |
| SHIPPING LABEL: | NONFLAMMABLE GAS | NONFLAMMABLE GAS |

15. REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

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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