



MATERIAL SAFETY DATA SHEET - CALIBRATION CHECK GAS

PRODUCT NAME: SULFUR DIOXIDE (0.0005- 0.03%), OXYGEN (0- 23.5%), BALANCE NITROGEN

MSDS NO: 174

Version:3

Date: March, 2012

1. Chemical Product and Company Identification

Gasco Affiliates, LLC
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24-HOUR EMERGENCY NUMBER: 1-800-424-9300

PRODUCT NAME: N/A
CHEMICAL NAME: N/A
COMMON NAMES/ SYNONYMS: None
TDG (Canada) CLASSIFICATION: 2.2
WHIMIS CLASSIFICATION: A, D2B

2. COMPOSITION/ INFORMATION ON INGREDIENTS

INGREDIENT	%VOLUME	PEL-OSHA	TLV-ACGIH	LD ₅₀ or LC ₅₀ Route/Species
Sulfur Dioxide FORMULA: SO ₂	0.0005 PPM to 0.003%	5 ppm TWA	2 ppm TWA 5 ppm STEL	LC ₅₀ 2520 ppm/1H (Rat)
Nitrogen FORMULA: N ₂	Balance	Simple Asphyxiant	Simple Asphyxiant	Not Available
Oxygen FORMULA: O ₂	0 to 23.5%	N/A	N/A	N/A

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This gas mixture is colorless and has a distinct sulfur-like odor. Sulfur Dioxide is irritation to the respiratory system, the skin, and eyes in relatively low concentrations. Additionally, releases of this gas mixture may produce oxygen-deficient atmospheres; individuals in such atmospheres may be asphyxiated.

SKIN AND EYE EFFECTS:

Due to the presence of Sulfur Dioxide, this gas mixture may be irritation to the skin. Sulfur Dioxide may react with moisture on the skin. Symptoms of skin over-exposure may include scratchiness, pain and redness. If Sulfur Dioxide contaminates the eyes, damage to eye tissue will result in pain, inflammation, and potentially, blindness.

SKIN EFFECTS:

Irritation to the skin and all living tissue. Toxic level exposure to dermal tissue can cause acid-like burns and skin lesions resulting in early necrosis and scarring.



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INGESTION EFFECTS:

Ingestion unlikely. Gas at room temperature.

INHALATION EFFECTS:

Due to the small size of an individual cylinder of this gas mixture, no unusual health effects from over-exposure to the product are anticipated under routine circumstances of use. The chief health hazard associated with this gas mixture is the potential for over-exposure to Sulfur Dioxide (especially if this gas mixture is used in an enclosed area or confined space). Exposure to Sulfur Dioxide gas in low concentrations is irritating to the mucous membranes of the eyes, nose, throat, and lungs (due to the formation of sulfurous acid when it comes into contact with moist tissues or moist air). Over-exposure to Sulfur Dioxide may also result in dryness and irritation of the nose and throat, choking, coughing, and bronchospasm. Severe over-exposure may cause pulmonary edema, airway obstruction, respiratory arrest, unconsciousness, and death through systemic acidosis.

TARGET ORGANS: ACUTE: Respiratory system, skin, eyes. CHRONIC: Skin, respiratory system, heart, teeth.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with impaired pulmonary function may be at increased risk from exposure.

NFPA HAZARD CODES

Health: 3
Flammability: 0
Reactivity: 0

HMIS HAZARD CODES

Health: 3
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:

Remove contaminated clothing as rapidly as possible. Flush affected area with copious quantities of water. Seek immediate medical attention.

INGESTION:

Not required

INHALATION:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH 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.



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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.

9. PHYSICAL AND CHEMICAL PROPERTIES

PARAMETER:	VALUE:
Physical state	: Gas
Evaporation point	: N/A
pH	: N/A
Odor and appearance	: Colorless gas with slight pungent odor

10. STABILITY AND REACTIVITY

Stable under normal conditions. Expected shelf life 15 months.

11. TOXICOLOGICAL INFORMATION

SUSPECTED CANCER AGENT: The components of this gas mixture are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

SULFUR DIOXIDE: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Unclassifiable as to Carcinogenicity in Humans) The remaining component, Nitrogen, is not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, and IARC; therefore, they are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: Due to the presence of Sulfur Dioxide, this gas mixture can be very irritating to the skin, eyes, and respiratory system.

SENSITIZATION TO THE PRODUCT: The components of this gas mixture are not known to cause sensitization.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this gas mixture and its components on the human reproductive system. Mutagenicity: No mutagenicity effects have been described for the components of this gas mixture. The Sulfur Dioxide component of this gas mixture has produced mutagenic effects on specific animal tissues exposed to relatively large doses. Embryotoxicity: No embryotoxic effects have been described for the components of this gas mixture.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) have not been determined for the components of this gas mixture.

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.



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14. TRANSPORT INFORMATION

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

15. REGULATORY INFORMATION

U.S. SARA REPORTING REQUIREMENTS: The components of this gas mixture are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows:

SARA 302 (40 CFR 355, Appendix A) yes for Sulfur Dioxide

SARA 304 (40 CFR Table 302.4) yes for Sulfur Dioxide

SARA 313 (40 CFR 372.65) no for Sulfur Dioxide

U.S. SARA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE THRESHOLD PLANNING QUANTITY: Sulfur Dioxide = 500 lb (227 kg)

U.S. SARA SECTION 304 EXTREMELY HAZARDOUS SUBSTANCE REPORTABLE QUANTITY: Sulfur Dioxide = 500 lb (227 kg)

U.S. TSCA INVENTORY STATUS: The components of this gas mixture are listed on the TSCA Inventory.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL INVENTORY STATUS: The components of this gas mixture are listed on the DSL Inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of this gas mixture are not on the CEPA Priorities Substances List.

CANADIAN WHMIS INFORMATION: This gas mixture is categorized as a Controlled Product, Hazard Classes A and D2B, as per the Controlled Product Regulations.

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.