



MATERIAL SAFETY DATA SHEET - CALIBRATION CHECK GAS

PRODUCT NAME: CARBON MONOXIDE (5 PPM TO 10%) IN AIR

MSDS NO: 48

Version:3

Date: July, 2010

1. Chemical Product and Company Identification

Gasco Affiliates, LLC
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PRODUCT NAME: CARBON MONOXIDE (5 PPM TO 10%) IN AIR
CHEMICAL NAME: Carbon Monoxide in air
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 |
|--------------------------------|---------------------|------------|----------------------------|---|
| Carbon Monoxide FORMULA: CO | <5 PPM to 10.0% | 50 ppm TWA | 25 ppm TWA 400 ppm STEL | LC ₅₀ 1807 ppm/4H (Rat) |
| Air FORMULA: Mixture | <99.0 to 99.9999 | N/A | N/A | N/A |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Inhaled Carbon monoxide binds to the blood hemoglobin, greatly reducing the red blood cell's ability to transport oxygen to body tissues. Effects may include headaches, dizziness, convulsions, loss of consciousness and death. Nonflammable.

ROUTE OF ENTRY:

| | | | | |
|------------------------|-----------------------|---------------------|----------------------------|-----------------|
| Skin Contact No | Skin Absorption No | Eye Contact No | Inhalation Yes | Ingestion No |
| Exposure Limits Yes | Irritant No | Sensitization No | Reproductive Hazard Yes | Mutagen Yes |

Carcinogenicity: --NTP: No IARC: No OSHA: No

EYE EFFECTS:

N/A

SKIN EFFECTS:

N/A

INGESTION EFFECTS:

Ingestion unlikely. Gas at room temperature.



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INHALATION EFFECTS:

If released in a confined area this product may displace oxygen and result in asphyxia.

Inhaled carbon monoxide binds with blood hemoglobin to form carboxyhemoglobin. Carboxyhemoglobin can not take part in normal oxygen transport, greatly reducing the blood's ability to transport oxygen. Depending on levels and duration of exposure, symptoms may include headache, dizziness, heart palpitations, weakness, confusion, nausea, and even convulsions, eventual unconsciousness and death.

NFPA HAZARD CODES

Health: 2
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:

N/A

SKIN:

N/A.

INGESTION:

N/A

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 48 months.

11. TOXICOLOGICAL INFORMATION

Inhalation of 150 ppm carbon monoxide for 24 hours by pregnant rats produced cardiovascular and behavioral defects in offspring. Toxic effects to fertility were observed in female rats exposed to 1 mg/m³ for 24 hours.

Genetic changes observed in mammalian cell assay systems at exposures of 1500 to 2500 ppm for 10 minutes.

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. (Carbon Monoxide in Air) | Compressed Gas N.O.S. (Carbon Monoxide in Air) |
| HAZARD CLASS: | 2.2 | 2.2 |
| IDENTIFICATION NUMBER: | UN1956 | UN1956 |
| SHIPPING LABEL: | NONFLAMMABLE GAS | NONFLAMMABLE GAS |

15. REGULATORY INFORMATION

Classified non-flammable/non-toxic according to Directives 88/379/EEC, 67/548/EEC and the UK's CHIP 96 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.

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