



MATERIAL SAFETY DATA SHEET - CALIBRATION CHECK GAS

PRODUCT NAME: TOLUENE (5 PPM – 0.6%) IN NITROGEN

MSDS NO: 242N

Version: 1

Date: August, 2010

1. Chemical Product and Company Identification

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PRODUCT NAME: TOLUENE (5 PPM – 0.6%) IN NITROGEN

CHEMICAL NAME: Toluene 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
Toluene FORMULA: C ₇ H ₈	0.0005-0.6	200 ppm 100 ppm		50 ppm N/A
NITROGEN FORMULA: Mixture	93.8 to 99.9999	Simple Asphyxiate	Simple Asphyxiate	Simple Asphyxiate

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This is a colorless gas mixture which is either odorless, or has a slight, solvent odor, due to the presence of Toluene. Releases of this gas mixture may produce oxygen-deficient atmospheres (especially in confined spaces or other poorly-ventilated environments); individuals in such atmospheres may be asphyxiated. Toluene, a component of this gas mixture, may cause eye irritation and central nervous system effects a relatively low concentrations (which are within the ranges present in this gas mixture). Such central nervous system effects can include drowsiness, Headache, and dizziness.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant route of over-exposure for this product is by inhalation or eye contact with the expanding gas mixture.

INHALATION: Due to the small size of an individual cylinder of this product, no unusual health effects from over-exposure to the gas mixture are anticipated under routine circumstances of use. The chief health hazard associated with this gas mixture is when this product contains less than 19.5% Oxygen and is released in a small, poorly-ventilated area (i.e. an enclosed or confined space). Under this circumstance, an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The effects associated with various levels of oxygen are as follows:

The effects associated with various levels of Toluene vapors are as follows:

CONCENTRATION SYMPTOM OF EXPOSURE

~50 ppm: Slight drowsiness and headache.

50-100 ppm: Irritation of the nose, throat and respiratory tract.

Above 100 ppm: Fatigue and dizziness.

Over 200 ppm: Symptoms similar to drunkenness, giddiness, numbness, and mild nausea.

Over 500 ppm: Mental confusion and incoordination, loss of appetite, a bad taste.

10,000 ppm (est) At this concentration Toluene causes visual disturbances and further depression of the central nervous system which can result in unconsciousness and death.



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OTHER HEALTH EFFECTS: Very short exposure (3-5 minutes) of the eyes of vapors to Toluene at a concentration of 300 ppm causes slight irritation. Longer exposures (6-7 hours) to levels above 100 ppm will cause irritation.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Over-exposure to this gas mixture may cause the following health effects:

ACUTE: Due to the small size of the individual cylinder of this product, no unusual health effects from exposure to the gas mixture are anticipated under routine circumstances of use. The most significant hazard associated with this gas mixture when it contains less than 19.5% oxygen is the potential for exposure to oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headaches, shortness of breath, wheezing, headache, dizziness, indigestion, nausea, unconsciousness, and death. The skin of a victim of over-exposure may have a blue color. Additionally, due to the presence of the Toluene component, this gas mixture may cause eye irritation and central nervous system effects in relatively low concentrations. Central nervous system effects may include drowsiness, dizziness, headaches.

CHRONIC: In rare cases, chronic over-exposure to Toluene (a component of this gas mixture) has lead to anemia and other problems with the blood and bone marrow. Animal studies indicate Toluene may have adverse reproductive effects. Refer to Section 11 (Toxicology Information) for additional information on the components of this gas mixture. Chronic exposure to oxygen-deficient atmospheres (below 18% oxygen in air) may affect the heart and nervous system.

TARGET ORGANS: ACUTE: Respiratory system, central nervous system, eyes. CHRONIC: Blood system, reproductive system, heart, cardiovascular system, central nervous system,.

4. FIRST AID MEASURES

EYES:

N/A

SKIN:

N/A

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.

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



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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 with a faint solvent odor

10. STABILITY AND REACTIVITY

Stable under normal conditions. Expected shelf life 48 months.

11. TOXICOLOGICAL INFORMATION

No toxicological damage caused by this product.

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. (Toluene in Nitrogen)	Compressed Gas N.O.S. (Toluene in Nitrogen)
HAZARD CLASS:	2.2	2.2
IDENTIFICATION NUMBER:	UN1956	UN1956
SHIPPING LABEL:	NONFLAMMABLE GAS	NONFLAMMABLE GAS

15. REGULATORY INFORMATION

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal

MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Toluene = 1000 lb (454 kg)

OTHER U.S. FEDERAL REGULATIONS:

- o Toluene is subject to the requirements of CFR 29 1910.1000. Toluene is listed on Table Z.2.
- o Toluene is a Toxic Pollutant under Section 307(a)(1) of the Clean Water Act and is subject to effluent limitations.
- o No component of this gas mixture subject to the reporting requirements of Section 112(r) of the Clean Air Act.
- o The regulations of the Process Safety Management of Highly Hazardous Chemicals are not applicable to this gas mixture (29 CFR 1910.119).
- o This gas mixture does not contain any Class I or Class II ozone depleting chemicals (40 CFR Part 82).
- o The components of this gas mixture are not listed as Regulated Substances, per 40 CFR, Part 68, of the Risk Management for Chemical Releases.



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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.

MSDS/S010/242N/August, 2010