



MATERIAL SAFETY DATA SHEET - CALIBRATION CHECK GAS

PRODUCT NAME: AMMONIA (10 PPM TO 5%) IN NITROGEN

MSDS NO: 13

Version:3

Date: January, 2006

1. Chemical Product and Company Identification

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PRODUCT NAME: AMMONIA (10 PPM TO 5%) IN NITROGEN

CHEMICAL NAME: Ammonia 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
Ammonia FORMULA: NH ₃	<10 PPM to 5.0%	N/A	25 ppm 35 ppm STEL	LC ₅₀ 2000 ppm/4H (Rat)
Nitrogen FORMULA: N ₂	≤99.0 to 99.9999	Simple Asphyxiant	Simple Asphyxiant	N/A

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Colorless gas with ammonia odor which may cause eye, skin and respiratory irritation. High concentrations of gas may accumulate in confined or poorly ventilated areas, displacing oxygen and causing unconsciousness or death. Exposure to ammonia present in this product may cause eye, skin and respiratory damage. High exposure may result in ammonia toxicity. Use only with adequate ventilation. Contents under pressure.

ROUTE OF ENTRY:

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

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

EYE EFFECTS:

Contact may cause eye irritation with associated redness, swelling, and tears. Ammonia can cause damage with corneal burns if not rinsed promptly.

SKIN EFFECTS:

Contact may cause skin irritation and redness.

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. High concentrations of ammonia vapors can cause laryngitis, pulmonary edema or pneumonitis.

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:

Immediately flush eyes with large amounts of water for at least 15 minutes opening and closing eyelids to ensure adequate rinsing. Seek medical attention.

SKIN:

Remove contaminated clothing and flush affected area with large quantities of water. If irritation persists, seek medical attention.

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 with ammonia odor

10. STABILITY AND REACTIVITY

Stable under normal conditions. Expected shelf life 12 months.

11. TOXICOLOGICAL INFORMATION

Eye irritation was reported in 6 human volunteers exposed to 94 mg/m³ ammonia for 5 minutes. At 700 ppm eye irritation and permanent injury may result if prompt medical measures are not taken. Concentrations of 5 to 10% ammonia rarely cause burns to the skin.

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

15. REGULATORY INFORMATION

Ammonia 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.

MSDS/S010/13/January, 2006