

This product contains hydrogen sulfide and nitrogen, substances subject to the Pennsylvania Worker and Community Right-To-Know Act.

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**PRODUCT IDENTITY**

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LABEL IDENTITY - MSA P/N 710414 Calibration Check Gas, 5 ppm Hydrogen Sulfide in Nitrogen  
CHEMICAL NAME - Hydrogen Sulfide, Nitrogen Mixture  
ADDITIONAL IDENTITIES - MSA P/N 710414 Calibration Gas  
FORMULA - H<sub>2</sub>S in N<sub>2</sub>

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**APPLICABLE CHEMICAL CONTENTS**

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	<u>%</u>	<u>TWA</u>	<u>STEL</u>
Hydrogen Sulfide (CAS 7783-06-4)	0.0005	1 ppm	5 ppm (ACGIH 2010)
Nitrogen (CAS 7727-37-9)	Balance	None	

NOTE: Gas Under Pressure, 500 PSIG at 70°F Approx. 58 Liters Gas at Atmospheric Pressure

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**PHYSICAL AND CHEMICAL PROPERTIES**

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APPEARANCE AND ODOR - Colorless, malodorous gas

Following information is for Nitrogen the main component of this gas mixture

BOILING POINT - -320.4°F (-195.8 °C)      SPECIFIC GRAVITY (air = 1) @70°F (21.1 °C): 0.906  
VAPOR PRESSURE @70°F (21.1 °C): N/A\*      PERCENT VOLATILE BY VOLUME - N/A\*  
GAS DENSITY @32°F (0 °C) and 1 atm: 0.072 lbs/ft<sup>3</sup> (1.153 kg/ m<sup>3</sup>)

VAPOR DENSITY (AIR = 1) - 1

SOLUBILITY IN WATER - H<sub>2</sub>S - 437-cm<sup>3</sup>/100 ml (0°C)  
Nitrogen - 2.3 -cm<sup>3</sup>/100 ml (0°C)

N/A \*- Not Applicable

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**PHYSICAL HAZARD INFORMATION**

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PHYSICAL HAZARD - Compressed gas, 500 PSIG at 70°F

CONDITIONS OR MATERIALS TO AVOID - None

FLASH POINT - N/A      LEL N/A      UEL - N/A

EXTINGUISHING MEDIA - This calibration gas mixture is non-flammable.

SPECIAL FIRE FIGHTING PROCEDURES - See next item.

UNUSUAL FIRE AND EXPLOSION HAZARDS - Gas under pressure, 500 PSIG at 70°F. Do not exceed 120°F.

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## HEALTH HAZARDS

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### HEALTH HAZARDS -

- Hydrogen Sulfide: LC<sub>LO</sub> (human inhalation) 800 ppm/5 minutes. No effects known below 5 ppm H<sub>2</sub>S.
- Nitrogen is an asphyxiant.

Note: this gas mixture contains 5 ppm hydrogen sulfide. Additionally, because this gas mixture contains less than 19.5% oxygen if this mixture is released in a small poorly ventilated area (confined space) an oxygen deficient environment may occur.

### SIGNS AND SYMPTOMS OF EXPOSURE –

- Hydrogen sulfide is an irritant of the eyes and respiratory tract. Headache, dizziness, nausea and vomiting, difficulty breathing. [Note: Sense of smell becomes rapidly fatigued and cannot be relied upon to warn of the continuous presence of H<sub>2</sub>S.]
- Oxygen deficient atmosphere: Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in the ears, dizziness, drowsiness, unconsciousness, nausea, vomiting and depression of all the senses. Under some circumstances of over-exposure, death may occur.

PRIMARY ROUTES OF ENTRY - Inhalation, skin and eyes

TARGET ORGANS – Hydrogen sulfide is an irritant of the eyes and respiratory tract.

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE – Pre-existing respiratory conditions may be aggravated by over-exposure to this gas mixture. Over exposure to hydrogen sulfide may also aggravated eye disorders and skin problems.

EXPOSURE LIMITS - ACGIH 2010: Hydrogen sulfide TWA 1 ppm, STEL 5 ppm

CARCINOGENICITY DATA - NIOSH RTECS, OSHA, NTP or IARC does not list Component gases.

EMERGENCY AND FIRST AID PROCEDURES - Remove from exposure.

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## SAFE HANDLING AND USE

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HYGIENIC PRACTICES - Avoid breathing gas.

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT - N/A

PROCEDURES FOR SPILL OR LEAK CLEANUP - Ventilate area.

WASTE DISPOSAL - Do not puncture or incinerate cylinder. Before discarding cylinder, slowly release contents to a safe exhaust. Dispose of cylinder in accordance with local, state, and federal regulations.

STORAGE - Store in a cool, dry, well-ventilated area. Do not exceed 120°F.

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## CONTROL MEASURES

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PERSONAL PROTECTIVE EQUIPMENT - Due to the limited amount of gas in the cylinder, and the low release rate employed in instrument calibration, respiratory protection is not indicated under conditions of intended use.

ENGINEERING CONTROLS - Mechanical ventilation is suitable.

WORK PRACTICES - Avoid breathing gas. Use in well-ventilated areas. Follow the calibration procedure detailed in the MSA instruction manual provided with the instrument under calibration.

DATE OF PREPARATION - Rev. 7, October 2010

WARNING: This is a hazardous chemical product. By following the directions and warnings provided with this product, the hazards associated with the use of this product can be greatly reduced but never entirely eliminated. Mine Safety Appliances Company makes no warranties, expressed or implied, with respect to this product and EXPRESSLY DISCLAIMS THE WARRANTY OF MERCHANTABILITY AND ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. Users assume all risks in handling, using or storing this product.