

MATERIAL SAFETY DATA SHEET
29 CFR 1910.1200 OSHA Hazard
Communication Rule Format
Chem-Tel 24 Hour Emergency # 1-800-255-3924

MINE SAFETY APPLIANCES COMPANY
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This product contains hydrogen sulfide, sulfur dioxide, and nitrogen, substances subject to the Pennsylvania Worker and Community Right-To-Know Act.

PRODUCT IDENTITY

LABEL IDENTITY - MSA P/N 10153806 Calibration Check Gas, 20 ppm Hydrogen Sulfide, 10 ppm Sulfur dioxide, Balance Nitrogen

CHEMICAL NAME - Carbon Monoxide, Methane, Oxygen, Hydrogen Sulfide, Sulfur Dioxide, Nitrogen Mixture

ADDITIONAL IDENTITIES - MSA P/N 10153806 Calibration Gas

FORMULA - $H_2S + SO_2 + N_2$

APPLICABLE CHEMICAL CONTENTS

	<u>%</u>	<u>TWA</u>	<u>STEL</u>
Hydrogen Sulfide (CAS 7783-06-4)	0.0020	1 ppm	5 ppm
Sulfur Dioxide (CAS 7446-09-5)(ACGIH 2013)	0.0010	----	0.25 ppm
Nitrogen (CAS 7727-37-9)	Balance	None	

NOTE: Gas Under Pressure, 500 PSIG at 70°F, Approx. 34 Liters Gas at Atmospheric Pressure

PHYSICAL AND CHEMICAL PROPERTIES

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/ft³ (1.153 kg/ m³)

VAPOR DENSITY (AIR = 1) - Approx. 1

SOLUBILITY IN WATER -

Hydrogen Sulfide -437 cm³/100 ml (0°C)

Nitrogen - 2.3 cm³/100 ml (0°C)

*N/A - Not Applicable

PHYSICAL HAZARD INFORMATION

PHYSICAL HAZARD – Colorless gas with a characteristic, irritating, pungent odor. 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 Gas Mixture is not 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.

HEALTH HAZARDS

HEALTH HAZARDS –

- Hydrogen sulfide LC₅₀ (human) 800 ppm/5 minutes. No effects known below 10 ppm.
- Sulfur Dioxide affects pulmonary function acting as a lower respiratory tract irritant.

SIGNS AND SYMPTOMS OF EXPOSURE –

- Hydrogen sulfide exposure is an irritant of the eyes and respiratory tract.
- Sulfur Dioxide concentrations of 10 to 50 parts per million (ppm) for 5 to 15 minutes may cause irritation to the eyes, nose and throat, choking and coughing..

PRIMARY ROUTES OF ENTRY - Inhalation, eyes

TARGET ORGANS –

- Hydrogen sulfide and Sulfur Dioxide act as irritants of the eyes and respiratory tract.

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE –

- ◆ Those with impaired heart or lung function and asthmatics are at increased risk to Hydrogen sulfide and Sulfur dioxide.

EXPOSURE LIMITS –

- Hydrogen sulfide: TWA is 1 ppm, STEL 5 ppm. (ACGIH 2013)
- Sulfur dioxide : STEL 0.25 ppm (ACGIH 2013); OSHA PEL 5 ppm
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CARCINOGENICITY DATA - NIOSH RTECS, OSHA, NTP or IARC does not list Component gases.

MUTAGEN:

It has been proven to be harmful to the reproductive systems of experimental animals and causes developmental changes in their newborn.

EMERGENCY AND FIRST AID PROCEDURES - Remove from exposure. Administer oxygen. Consult physician immediately.

SAFE HANDLING AND USE

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.

CONTROL MEASURES

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. 0, January 2014

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.