

This product contains sulfur dioxide, oxygen and nitrogen, substances subject to the Pennsylvania Worker and Community Right-To-Know Act.

---

**PRODUCT IDENTITY**

---

LABEL IDENTITY - MSA P/N 10028070 Calibration Check Gas, 10 ppm Sulfur Dioxide in Air

CHEMICAL NAME - Sulfur Dioxide, Oxygen, Nitrogen Mixture

ADDITIONAL IDENTITIES - MSA P/N 10028070 Calibration Gas

FORMULA -  $SO_2 + O_2 + N_2$

---

**APPLICABLE CHEMICAL CONTENTS**

---

	<u>ppm</u>	<u>ACGIH-TWA</u>	<u>ACGIH-STEL</u>	<u>OSHA-PEL</u>
Sulfur Dioxide(CAS 7446-09-5)(ACGIH 2011)	10 ppm	-----	0.25ppm	5 ppm
Air	Balance	-----	-----	-----

NOTE: Gas Under Pressure, 500 PSIG at 70°F, Approx. 58 liters gas at atmospheric pressure

---

**PHYSICAL AND CHEMICAL PROPERTIES**

---

APPEARANCE AND ODOR - Colorless, irritating, pungent odor.

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 - Sulfur Dioxide - 22.8 grams/100 ml (0°C)  
Oxygen - 3.2 cm<sup>3</sup>/100 ml (25°C)  
Nitrogen - 2.3 cm<sup>3</sup>/100 ml (0°C)

\*N/A - Not Applicable

---

**PHYSICAL HAZARD INFORMATION**

---

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

CONDITIONS OR MATERIALS TO AVOID – Forms sulfuric acid solutions with water.

FLASH POINT - Not Applicable                      LEL - N/A                      UEL - N/A

EXTINGUISHING MEDIA -. Use appropriate media for surrounding materials. Sulfur dioxide forms sulfuric acid solutions with water.

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

---

**HEALTH HAZARDS**

---

HEALTH HAZARDS – Sulfur dioxide is not listed as a carcinogen per NTP, IARC, and OSHA. The irritant action of sulfur dioxide is caused by the formation of sulfurous or sulfuric acid when the gas dissolves in water.

SIGNS AND SYMPTOMS OF EXPOSURE - Inhalation causes bronchoconstriction caused by sulfur dioxide is concentration related. Exposure to the vapors is corrosive and irritating to the eye and the skin.

PRIMARY ROUTES OF ENTRY – Inhalation, dermal and eyes

TARGET ORGANS - lungs, upper respiratory tract, skin, and eyes.

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE:

Exposure may aggravate any pre-existing eye, skin, or respiratory disorder. Smokers and persons with pre-existing respiratory (i.e. asthma), nasal and cardiovascular disease may be more susceptible to effects of sulfur dioxide.

EXPOSURE LIMITS – (ACGIH 2011): STEL 0.25 ppm, OSHA PEL 5ppm.

CARCINOGENICITY DATA - Component gases are not listed by OSHA, NTP or IARC. Animal experimentation reportedly indicates that sulfur dioxide may promote the activity of other substances when present together.

EMERGENCY AND FIRST AID PROCEDURES - The contents of P/N 10028070 Calibration Check Gas (58 liters of 10 ppm SO<sub>2</sub> in air or approximately 1.1 milligram sulfur dioxide) is insufficient to sustain a volume above the STEL if accidentally released to ambient air. Content of one cylinder diluted by 1 cubic meter of ambient air would yield 0.1 ppm Sulfur dioxide. It would require the simultaneous release of three P/N 10028070 calibration cylinders to produce a concentration of 0.3 ppm in a cubic meter of air. If an overexposure somehow occurs remove affected person(s) from exposure if breathing has stopped give artificial respiration if breathing is difficult give oxygen. Get immediate medical attention in all cases.

---

**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 3, May 2011

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.