

**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**  
**P.O. Box 426**  
**Pittsburgh, PA 15230**  
**PHONE (412) 967-3000**

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

---

**PRODUCT IDENTITY**

---

LABEL IDENTITY - MSA P/N 10014897 Calibration Check Gas, 5 ppm Silane in Nitrogen

CHEMICAL NAME - Silane, Nitrogen Mixture

ADDITIONAL IDENTITIES - MSA P/N 10014897 Calibration Gas

FORMULA -  $\text{SiH}_4$  in  $\text{N}_2$

---

**APPLICABLE CHEMICAL CONTENTS**

---

	<u>%</u>	<u>TWA</u>	<u>STEL</u>
Silane (CAS 7803-62-5)	0.0005	5 ppm (ACGIH 1999)	None (ACGIH 1999)
Nitrogen (CAS 7727-37-9)	Balance	None	

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

---

**PHYSICAL AND CHEMICAL PROPERTIES**

---

APPEARANCE AND ODOR - Colorless gas with a disagreeable repulsive odor.

BOILING POINT - N/A

VAPOR PRESSURE - N/A

VAPOR DENSITY (AIR = 1) - 1

SOLUBILITY IN WATER -  $\text{SiH}_4$  - insoluble, decomposes slowly in water  
Nitrogen - 2.3  $\text{cm}^3$ /100 ml (0°C)

SPECIFIC GRAVITY ( $\text{H}_2\text{O} = 1$ ) - N/A

PERCENT VOLATILE BY VOLUME - N/A

N/A - Not Applicable

---

**PHYSICAL HAZARD INFORMATION**

---

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

CONDITIONS OR MATERIALS TO AVOID - Air, oxygen, chlorine, fluorine, and all oxidizing agents.

FLASH POINT -N/A

LEL - N/A

UEL - N/A

EXTINGUISHING MEDIA -This Calibration 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 - Silane is a toxic gaseous compound. It is an irritant to eyes skin and airway. It is a central nervous system depressant.  $\text{LC}_{50}$  4 Hour inhalation, Rat, 9600 ppm.  $\text{LC}_{\text{LO}}$  4 Hour inhalation, Mouse, 9600 ppm.

SIGNS AND SYMPTOMS OF EXPOSURE - Symptoms may include coughing, shortness of breath, wheezing, increased

bronchial secretions and pulmonary edema; weakness, fatigue, headache, dizziness, fainting, drowsiness, tremors, disturbances of gait, convulsions, and coma; abdominal pain, thirst, nausea, and vomiting. Severe exposure may be lethal. High concentrations of silane are irritating to the eyes.

PRIMARY ROUTES OF ENTRY - Inhalation.

TARGET ORGANS – Eyes, Skin, Respiratory System, Central Nervous System.

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE - No Information

EXPOSURE LIMITS - ACGIH 1999: TLV-TWA SiH<sub>4</sub> 5 ppm, STEL none.

CARCINOGENICITY DATA - Component gases are not listed by NIOSH RTECS, OSHA, NTP or IARC.

EMERGENCY AND FIRST AID PROCEDURES - Prompt medical attention is mandatory in all cases of overexposure to silane. Rescue personnel should be equipped with self-contained breathing apparatus.

Eye: Immediately and thoroughly flush the eyes with large amounts of water for at least 15 minutes, occasionally lifting the lower and upper eyelids. If irritation, pain, swelling, lacrimation, or photophobia persist, get medical attention as soon as possible.

Skin: Immediately and thoroughly wash contaminated skin with soap and water. Get medical attention as soon as possible.

Breath: Move the exposed person to fresh air at once. If breathing has stopped, give artificial respiration. Get medical attention as soon as possible.

---

#### **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. Avoid Breathing Gas.

WASTE DISPOSAL - Do not puncture or incinerate cylinder. Before discarding cylinder, slowly release contents to a safe exhaust.

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. 10, December 1999

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.