

**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**  
**1000 Cranberry Woods Drive**  
**Cranberry Township, PA 16066**  
**PHONE (724) 776-8900**

This product contains methane, oxygen 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 459945 Calibration Check Gas, 2% Methane in Air  
 CHEMICAL NAME - Methane, Oxygen, Nitrogen Mixture  
 ADDITIONAL IDENTITIES - MSA P/N 459945 Calibration Gas  
 FORMULA -  $\text{CH}_4 + \text{O}_2 + \text{N}_2$

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### APPLICABLE CHEMICAL CONTENTS

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	<u>%</u>	<u>TWA</u>
Methane (CAS 74-82-8)	2.0	NA**
Air	Balance	None

\*\*Methane as an asphyxiant (ACGIH 2013)

NOTE: Gas under pressure, 400 PSIG at 70°F, Approx. 27 liters at atmospheric pressure

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### PHYSICAL AND CHEMICAL PROPERTIES

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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) - Approx. 1  
 SOLUBILITY IN WATER - Methane - 9 cm<sup>3</sup>/100 ml (20°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

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### PHYSICAL HAZARD INFORMATION

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PHYSICAL HAZARD - Compressed gas, 400 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 not flammable

SPECIAL FIRE FIGHTING PROCEDURES - See next item

UNUSUAL FIRE AND EXPLOSION HAZARDS - Gas under pressure, 400 PSIG at 70°F. Do not exceed 120°F.

\*N/A-Not Applicable

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**HEALTH HAZARDS**

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HEALTH HAZARDS – Central nervous system (CNS) depression and cardiac sensitization, methane as an alkane (ACGIH 2013)

SIGNS AND SYMPTOMS OF EXPOSURE – Exposure to methane as an asphyxiant causes CNS depression and cardiac sensitization.

PRIMARY ROUTES OF ENTRY - Inhalation

TARGET ORGANS – CNS and heart.

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

EXPOSURE LIMITS –methane as an asphyxiant (ACGIH 2013)

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

EMERGENCY AND FIRST AID PROCEDURES - Remove From Exposure. Administer Oxygen. Consult Physician Immediately

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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.

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

\*N/A - Not Applicable

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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. 13, October 2013

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.