

**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 carbon dioxide, methane 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 801045 Calibration Check Gas, 1.3% Carbon Dioxide + 2.5% Methane in Nitrogen

CHEMICAL NAME - Carbon Dioxide, Methane, Nitrogen mixture

ADDITIONAL IDENTITIES - MSA P/N 801045 Calibration Gas

FORMULA -  $\text{CO}_2 + \text{CH}_4$  in  $\text{N}_2$

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**APPLICABLE CHEMICAL CONTENTS**

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	<u>%</u>	<u>TWA</u>
Carbon Dioxide (CAS 124-38-9)	1.3	5000 ppm
STEL 30,000 ppm		
Methane (CAS 74-82-8)	2.5	None*
Nitrogen (CAS 7727-37-9)	Balance	None*

\* Methane and Nitrogen are asphyxiants

NOTE: Gas Under Pressure, 1000 PSIG at 70°F, Approx. 100 Liters Gas at Atmospheric Pressure

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**PHYSICAL AND CHEMICAL PROPERTIES**

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APPEARANCE AND ODOR - Colorless, Odorless Gas

BOILING POINT - N/A

VAPOR PRESSURE - N/A

VAPOR DENSITY (AIR = 1) - Approx. 1

SOLUBILITY IN WATER - Carbon Dioxide - 179 cm<sup>3</sup>/100 ml (0°C)  
Methane - 9 cm<sup>3</sup>/100 m. (20°C)  
Nitrogen - 2.3 cm<sup>3</sup>/100 ml (0°C)

SPECIFIC GRAVITY (H<sub>2</sub>O = 1) - N/A

PERCENT VOLATILE BY VOLUME - N/A

N/A - Not Applicable

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**PHYSICAL HAZARD INFORMATION**

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PHYSICAL HAZARD - Compressed Gas, 1000 PSIG at 70°F

CONDITIONS OR MATERIALS TO AVOID: Carbon Dioxide Reacts With Caustic Materials

FLASH POINT - N/A

EXTINGUISHING MEDIA - This Calibration Gas Mixture Is Not Flammable.

SPECIAL FIRE FIGHTING PROCEDURES -Use self-contained pressure demand type breathing apparatus with full facepiece.

UNUSUAL FIRE AND EXPLOSION HAZARDS - Gas Under Pressure, 1000 PSIG at 70°F. Do Not Exceed 120°F.

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### HEALTH HAZARDS

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HEALTH HAZARDS - Carbon Dioxide, Methane and Nitrogen are asphyxiants. High concentrations of Carbon Dioxide also produce acute toxicological effects as follows:

- 20-30% - Unconsciousness and convulsions within one minute.
- 12% - Unconsciousness in 8-23 minutes.
- 10-15% - Neurologic symptoms such as muscle twitches and eye flickering after 1.5 minutes.
- 6-10% - Difficult breathing, headache, dizziness, sweating, restlessness, prickly skin sensations, general discomfort.
- 5% - Sensation of increased respiration.
- 2% - Headache, difficult breathing after several hours exposure.

SIGNS AND SYMPTOMS OF EXPOSURE - Significant dilution of ambient air by asphyxiants causes air hunger, increased breathing frequency, drowsiness, weakness and ringing in ears.

PRIMARY ROUTES OF ENTRY - Inhalation

TARGET ORGANS - Lungs

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

EXPOSURE LIMITS - Carbon Dioxide 5000 ppm; STEL 30,000. Methane and nitrogen - None. Both are asphyxiants.

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

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. Avoid Breathing Gas

WASTE DISPOSAL-Do not puncture/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.

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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. 5, June 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.