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 Twp, PA 16066 PHONE (724)-776-8900

This product contains methane and methyl mercaptan substances subject to the Pennsylvania Worker and Community Right-To-Know Act.

PRODUCT IDENTITY

LABEL IDENTITY - MSA P/N 711014 Calibration Check Gas, 100% Methane with Methyl Mercaptan

CHEMICAL NAME - Methane with Methyl Mercaptan

ADDITIONAL IDENTITIES - MSA P/N 711014 Calibration Gas, Methane with Methanethiol

FORMULA - CH₄, CH₃SH

APPLICABLE CHEMICAL CONTENTS

NOTE: Gas under pressure, 500 PSIG at 70°F, and contains approx. 58 liters gas at atmospheric pressure

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR - Colorless Gas, with an odor of rotten cabbage or garlic

BOILING POINT - -258.7 °F (-161 ° C) SPECIFIC GRAVITY (air = 1) @70°F (21.1 °C): 0.555

VAPOR PRESSURE @70°F (21.1 °C): N/A* PERCENT VOLATILE BY VOLUME - N/A*

GAS DENSITY @**60°F** (**15.6 °C**) and **1** atm: 0.04235 lbs/ft³

SOLUBILITY IN WATER - Methane - 9 cm3/100 ml (20°C)

Methyl Mercaptan - 2.4 cm³/100 ml (20°C)

*N/A - Not Applicable

PHYSICAL HAZARD INFORMATION

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

CONDITIONS OR MATERIALS TO AVOID - Keep away from heat, sparks and flame.

EXTINGUISHING MEDIA - Dry chemical, carbon dioxide, or water.

SPECIAL FIRE FIGHTING PROCEDURES - Stop flow of gas keep adjacent areas cool. It may be necessary or desirable to allow flame at cylinder or storage tank to continue burning while cooling surroundings with water from a safe distance.

UNUSUAL FIRE AND EXPLOSION HAZARDS - Forms flammable and explosive mixtures with air or oxygen. Hazard of reignition or explosion exists if flame is extinguished without stopping flow of gas or cooling surrounds. Danger of rocketing cylinders and explosion exists. Gas under pressure, 250 PSIG at 70°F. Do not exceed 120°F.

NOTE: Gas is lighter than air and must not be allowed to accumulate in elevated locations.

HEALTH HAZARDS

HEALTH HAZARDS - Methane as an alkane CNS depression and cardiac sensitization. It can, however, reduce the amount of oxygen in the air necessary to support life. Exposure to oxygen-deficient atmospheres (< 19.5%) may produce dizziness, nausea, vomiting, loss of consciousness, and death. At very low oxygen concentrations (< 12%) unconsciousness and death may occur without warning. Methyl Mercaptan is added as an odorizer. The odor threshold of Methyl Mercaptan is 0.0021 ppm. Exposure to Mercaptan may cause eye, skin, and respiratory system irritation. Chronic low-level exposures to Mercaptan produced functional disorders in female workers. A 90 day continuous inhalation study at a concentration of 50 ppm produced hematological, hepatic, and minor lung effects in animals.

SIGNS AND SYMPTOMS OF EXPOSURE - Eye, skin, and respiratory system irritation.

PRIMARY ROUTES OF ENTRY - Inhalation

TARGET ORGANS - Methane: Central Nervous system, and heart. Methyl Mercaptan: Liver, systemic.

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE - No information.

EXPOSURE LIMITS - Methane – 1000 ppm; Methyl Mercaptan - 0.5 ppm (ACGIH 2011).

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

EMERGENCY AND FIRST AID PROCEDURES - Remove victim from exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention 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 - Methane is a flammable, colorless, compressed gas packaged in cylinders under high pressure. It poses an immediate fire and explosion hazard when concentrations exceed 5.0%. Concentrations that can cause rapid suffocation are within or above flammable range. In case of leak, ventilate area. Shut off methane source if possible. Remove sources of heat or ignition. Use soap solution to detect leaks.

WASTE DISPOSAL - Do not puncture or incinerate cylinder. Before discarding cylinder, slowly release contents outdoors with the proper regulator. 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 - Provide ventilation and/or exhaust to prevent accumulation of gas concentrations above 1.0%.

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. 6, Sept. 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.