**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 a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Section 313 chemicals are identified below under **APPLICABLE CHEMICAL CONTENTS**.

This product contains Hydrogen Cyanide and Nitrogen, substances subject to the Pennsylvania Worker and Community Right-To-Know Act.

## PRODUCT IDENTITY

LABEL IDENTITY - MSA P/N 711072, Calibration Check Gas, 10 ppm Hydrogen Cyanide in Nitrogen.

CHEMICAL NAME - Hydrogen Cyanide, Nitrogen Mixture

ADDITIONAL IDENTITIES - MSA P/N 711072 Calibration Gas

FORMULA - HCN in $N_2$

## APPLICABLE CHEMICAL CONTENTS

| | % | TWA |
|---|---|---|
| Hydrogen Cyanide (CAS 74-90-8) | 0.0010 | *C 4.7 ppm |
| Nitrogen (CAS 7727-37-9) | Balance | None |

*C = Ceiling

NOTE: Gas under pressure, 500 PSIG at 70°F. Approx. 34 liters gas at atmospheric pressure.

Title III Section 313 Chemical: Hydrogen Cyanide (CAS No. 74-90-8)

## PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR - Colorless gas, odor variously described as bitter almond, oniony, garlicky
BOILING POINT - N/A
SPECIFIC GRAVITY - N/A
VAPOR PRESSURE - N/A
PERCENT VOLATILE BY VOLUME - N/A
VAPOR DENSITY - Approx. 1
SOLUBILITY IN WATER - Very soluble

N/A - Not Applicable

## PHYSICAL HAZARD INFORMATION

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

CONDITIONS OR MATERIALS TO AVOID - None

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

EXTINGUISHING MEDIA - This 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 - The IDLH (Immediately Dangerous to Life or Health) is 50 ppm. HCN is a highly toxic gas with $LC_{LO}$ reportedly as follows:

Human inhalation $LC_{LO}$ 120 mg/$m^3$/1 hour
Human inhalation $LC_{LO}$ 200 mg/$m^3$/10 minutes
Human inhalation $LC_{LO}$ 270 ppm/6-8 minutes
Human inhalation $LC_{LO}$ 181 ppm/10 minutes
Human inhalation $LC_{LO}$ 135 ppm/30 minutes

SIGNS AND SYMPTOMS OF EXPOSURE - Weakness, confusion, headache, nausea, collapse.

PRIMARY ROUTES OF ENTRY - Inhalation, skin absorption.

TARGET ORGANS - HCN blocks utilization of delivered oxygen, resulting in rapid cellular asphyxiation.

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

EXPOSURE LIMITS - ACGIH 1995-96 ceiling 4.7 ppm; OSHA 10 ppm, 11 mg/$m^3$ skin designation; NIOSH C 4.7 ppm

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

EMERGENCY AND FIRST AID PROCEDURES - Overexposure to HCN is not indicated with intended product use due to the limited quantity of HCN contained in an individual cylinder. Nevertheless, first aid procedure for HCN gas is described here should overexposure somehow occur. Cyanide poisoning is rapidly fatal and prompt emergency treatment by prepared medical personnel is required. Antidote kits for use by medical personnel are available from the Eli Lilly Company as Cyanide Antidote Package M-76 and from Pasadena Research Laboratories as Cyanide Antidote Package No. 0418-4030-01. If physicians, registered nurses, or trained emergency medical technicians are readily available and close by the scene use of these kits can be crucial for the treatment that should follow first aid measures.

FIRST AID - Remove the victim from exposure. Get medical attention immediately. Apply artificial respiration if the victim is not breathing. Have an assistant break an Amyl Nitrite pearl in a handkerchief and hold lightly near the victim's nose and mouth for 15 seconds and remove for 15 seconds. This interrupted application of Amyl Nitrite is important as continuous application may prevent adequate oxygenation. Repeat application five times at 15 second intervals. Use a fresh pearl every five minutes until three or four pearls have been used. Persons giving first aid should avoid breathing Amyl Nitrite vapor. Amyl Nitrite pearls should not be over two years old.

## SAFE HANDLING AND USE

HYGIENIC PRACTICES - Avoid breathing gas. Avoid skin contact with gas.

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT - Not Applicable

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. 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. Use in well-ventilated areas.

WORK PRACTICES - Avoid breathing gas. Avoid skin contact with 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. 4, 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.