

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 pentane, oxygen, carbon monoxide and nitrogen, substances subject to the Pennsylvania Worker and Community Right-To-Know Act.

PRODUCT IDENTITY

LABEL IDENTITY - MSA P/N 10125947 Calibration Check Gas, 0.375% Pentane, 15% Oxygen, and 60 ppm Carbon Monoxide in Nitrogen

CHEMICAL NAME - Pentane, Oxygen, Carbon Monoxide, Nitrogen Mixture

ADDITIONAL IDENTITIES - MSA P/N 10125947 Calibration Gas

FORMULA - $C_5H_{12} + O_2 + CO$ in N_2

APPLICABLE CHEMICAL CONTENTS

	<u>%</u>	<u>TWA</u>
Pentane (CAS 109-66-0)	0.375	0.06%
Oxygen (CAS 7782-44-7)	15	None
Carbon Monoxide (CAS 630-08-0)	0.006	25 ppm
Nitrogen (CAS 7727-37-9)	Balance	None

NOTE: Gas Under Pressure, 1000 PSIG at 70°F, Approx. 58 Liters at Atmospheric Pressure

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR - Colorless Gas, Faint Hydrocarbon Odor

BOILING POINT - N/A

VAPOR PRESSURE - N/A

VAPOR DENSITY (AIR = 1) - Approx. 1

SOLUBILITY IN WATER - Pentane - 11 cm³/100 ml (16°C)
Oxygen - 3.2 cm³/100 ml (25°C)
Carbon Monoxide - 3.5 cm³/100 ml (0°C)
Nitrogen - 2.3 cm³/100 ml (0°C)

N/A - Not Applicable

PHYSICAL HAZARD INFORMATION

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

CONDITIONS OR MATERIALS TO AVOID - None

FLASH POINT - N/A

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, 1000 PSIG at 70°F. Do Not Exceed 120°F.

NOTE: Do not use for instrument calibration if cylinder temperature is below 5°C (40°F); otherwise contents may become explosive. If cylinder is used below this temperature, treat as explosive by allowing cylinder to reach room temperature and vent entire contents in area free of an ignition source. Recalibrate instrument as calibration may be in error. Failure to follow this warning can result in serious personal injury or death.

HEALTH HAZARDS

HEALTH HAZARDS - Pentane may be irritating to mucous membranes. Carbon Monoxide TCLO (human) is 650 ppm/45 minutes. LCLO (human) is 5000 ppm/5 minutes.

SIGNS AND SYMPTOMS OF EXPOSURE - Exposure to pentane may cause respiratory tract irritation. Exposure to 500-1000 ppm CO may cause headache, rapid breathing, nausea, weakness, dizziness, and confusion.

PRIMARY ROUTES OF ENTRY - Inhalation

TARGET ORGANS - Pentane: respiratory tract. Carbon Monoxide: lungs, blood, tissues.

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE - - Carbon monoxide burden may aggravate angina pectoris. Pregnant women are reportedly more sensitive than others. Effects of CO exposure are aggravated by heavy labor, heat stress, and high altitude.

EXPOSURE LIMITS – ACGIH 2011, TWA for Pentane is 600 ppm, TWA for Carbon Monoxide is 25 ppm.

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.

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. 0, January 2012

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.