

This product contains pentane, oxygen and nitrogen, substances subject to the Pennsylvania Worker and Community Right-To-Know Act.

PRODUCT IDENTITY

LABEL IDENTITY - MSA P/N 476304 Calibration Check Gas, 0.75% Pentane and 15% Oxygen in Nitrogen
CHEMICAL NAME - Pentane, Oxygen, Nitrogen Mixture
ADDITIONAL IDENTITIES - MSA P/N 476304 Calibration Gas
FORMULA - $C_5H_{12} + O_2 + N_2$

APPLICABLE CHEMICAL CONTENTS

	<u>%</u>	<u>TWA</u>	<u>OSHA PEL</u>
Pentane (CAS 109-66-0)(ACGIH 2010)	0.75	0.06%	0.10%
Oxygen (CAS 7782-44-7)	15	None	
Nitrogen (CAS 7727-37-9)	Balance	None	

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

PHYSICAL AND CHEMICAL PROPERTIES

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/ft³ (1.153 kg/ m³)
VAPOR DENSITY (AIR = 1) - Approx. 1
SOLUBILITY IN WATER - Pentane - 11 cm³/100 ml (16°C)
Oxygen - 3.2 cm³/100 ml (25°C)
Nitrogen - 2.3 cm³/100 ml (0°C)

N/A - Not Applicable

PHYSICAL HAZARD INFORMATION

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.

HEALTH HAZARDS

HEALTH HAZARDS - Inhalation over-exposures to components of this gas mixture (n-Pentane in air) can cause anesthetic effects and motor neuropathy (i.e. pain and tingling in feet and hands).

SIGNS AND SYMPTOMS OF EXPOSURE - Effects include numbing or tingling sensation, tiredness, cramps, spasms in legs, difficulty holding objects or walking, loss of appetite and weight loss. Pentane isomers, such as n-Pentane, can cause sensitization of the heart to epinephrine.

PRIMARY ROUTES OF ENTRY - Inhalation

TARGET ORGANS - ACUTE: Respiratory system, blood system, central nervous system effects. CHRONIC: Cardiovascular system, reproductive system, skin, central nervous system.

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE - Acute or chronic respiratory conditions may be aggravated by over-exposure to the components of this gas mixture. Because of the presence of n-Pentane in this gas mixture, central nervous system conditions, eye disorders, or skin problems may be aggravated by over-exposure to this gas mixture.

EXPOSURE LIMITS – ACGIH (2010), Pentane 600 ppm ; OSHA PEL 1000 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.

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.

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. 12, October 2010

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.