

**MATERIAL SAFETY DATA SHEET**  
**29 CFR 1910.1200 OSHA Hazard**  
**Communication Rule Format**  
**Chem-Tel 24 Hour Emergency # 1-800-255-3924**

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This product contains oxygen 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 10081604, Calibration check gas 15% butane in Nitrogen  
 CHEMICAL NAME - Butane, Nitrogen mixture  
 ADDITIONAL IDENTITIES - MSA P/N 10081604 calibration gas  
 FORMULA -  $C_4H_{10} + N_2$

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**APPLICABLE CHEMICAL CONTENTS**

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	<u>%</u>	<u>TWA</u>	<u>OSHA PEL</u>
Butane ( 106-97-8) (ACGIH 2008)	15.0	1000 ppm*	None
Nitrogen (CAS 7727-37-9)	Balance	None	None

NOTE: \* Butane as an alkane (ACGIH 2008)

NOTE: Gas under pressure, 120 PSIG at 70°F. 8 Liters gas at atmospheric pressure.

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**PHYSICAL AND CHEMICAL PROPERTIES**

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APPEARANCE AND ODOR – Colorless, disagreeable odor, compressed liquefied gas, heavier than air.

BOILING POINT : -0.5 °C

VAPOR PRESSURE @1.1°C: 16.54 psig

PERCENT VOLATILE BY VOLUME - N/A\*

VAPOR DENSITY (AIR = 1) : 2.0064

SOLUBILITY IN WATER - butane 6.1 cm<sup>3</sup>/100 ml (37.8°C)  
 Nitrogen - 2.3 cm<sup>3</sup>/100 ml (0°C)

N/A \*- Not Applicable

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**PHYSICAL HAZARD INFORMATION**

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**WARNING: DO NOT USE FOR INSTRUMENT CALIBRATION IF CYLINDER TEMPERATURE IS BELOW 40° Fahrenheit or 5° Centigrade, FAILURE TO FOLLOW THIS REQUIREMENT CAN RESULT IN SERIOUS PERSONAL INJURY OR DEATH.**

PHYSICAL HAZARD - Compressed gas, 120 PSIG at 70°F

CONDITIONS OR MATERIALS TO AVOID: Strong oxidizers.

FLASH POINT : -76 °F

LEL – 1.8%

UEL – 8.4%

EXTINGUISHING MEDIA – Shut off source of the gas. 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 re-ignition 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, 120 PSIG at 70°F. Do not exceed 120°F.

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**HEALTH HAZARDS**

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HEALTH HAZARDS : Most significant health hazard is the potential for over exposure to oxygen deficient atmospheres. Butane has an anesthetic effect.

SIGNS AND SYMPTOMS OF EXPOSURE : Dizziness, confusion, excitation, asphyxia. Liquid exposure will cause frostbite.

PRIMARY ROUTES OF ENTRY – Inhalation, skin and or eye contact.

TARGET ORGANS – Heart, respiratory system, and 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 product.

EXPOSURE LIMITS – ACGIH 2008- 1000 ppm TWA,.

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

EMERGENCY AND FIRST AID PROCEDURES : **RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS GAS WITHOUT ADEQUATE FIRE-RETARDANT AND PERSONAL PROTECTIVE EQUIPMENT.** No unusual health effects are anticipated after exposure to this gas mixture due to the small cylinder size. If any adverse symptom develops after over-exposure to this gas mixture, remove victim(s) to fresh air as quickly as possible. Seek medical help.

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**SAFE HANDLING AND USE**

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HYGIENIC PRACTICES - Use non sparking tools when working with this gas mixture.

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT : Purge equipment with inert gas and use product in ventilated areas.

PROCEDURES FOR SPILL OR LEAK CLEANUP – In case of gas release clear the affected area, protect people. Eliminate any possible ignition sources and provide maximum explosion proof ventilation. Butane is a flammable, colorless, liquefied compressed gas packaged in cylinders under high pressure. It poses an immediate fire and explosion hazard when concentrations exceed 1.0%. Concentrations that can cause rapid suffocation are within or above flammable range. In case of leak, ventilate area. Shut off propane 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. Keep cylinder in an upright position while in storage and in use. Store cylinders away from oxidizers separate by a minimum distance of 50 feet. Keep away from sources of heat, ignition and direct sunlight. Do not exceed 120°F.

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**CONTROL MEASURES**

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PERSONAL PROTECTIVE EQUIPMENT : Safety glasses.

ENGINEERING CONTROLS : Provide ventilation and/or exhaust to prevent accumulation of gas concentrations above 1.0%.

WORK PRACTICES - Follow the calibration procedure detailed in the MSA instruction manual provided with the instrument under calibration.

DATE OF PREPARATION - Rev. 1, February 2009.

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.