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MESA Specialty Gases & Equipment  
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## MATERIAL SAFETY DATA SHEET

<b>Chemical Name:</b> Isobutane, Nitrogen
<b>Chemical Formula:</b> i-C <sub>4</sub> H <sub>10</sub> /N <sub>2</sub>
<b>Chemical Family:</b> Flammable Gas Mixture
<b>Hazard Classification:</b> Compressed Gas, Flammable, N.O.S., UN1954, Red Label
<b>Phone Number for Information:</b> Infotrac
<b>Emergency Contact:</b> 800-535-5053 (Int'l 352-323-3500)

### SECTION 1 – MATERIAL IDENTIFICATION

COMPONENT	CAS No.	CONCENTRATION	OSHA PEL	ACGIH TLV
Isobutane	75-28-5	> 5.7 mole%	*	*
Nitrogen	7727-37-9	Balance	None	None
*There are no specific exposure limits for Isobutane. Isobutane is a simple asphyxiant .				

### SECTION 2 – PHYSICAL/CHEMICAL CHARACTERISTICS

<b>Boiling Point:</b> N/A	<b>Specific Gravity (H<sub>2</sub>O)= 1, 20 deg C):</b> N/A
<b>Vapor Pressure (mm Hg, 20 deg C):</b> N/A	<b>Melting Point:</b> N/A
<b>Vapor Density (Air = 1):</b> 0.967	<b>Evaporation Rate (Butyl Acetate = 1):</b> N/A
<b>Solubility in Water:</b> N/A	
<b>Appearance and Odor:</b> Colorless and odorless	

### SECTION 3 – FIRE AND EXPLOSION HAZARD DATA

<b>Flash Point (Method Used):</b> Flammable Gas	<b>Flammable Limits: LEL:</b> Variable <b>UEL:</b> Variable
<b>Extinguishing Media:</b> Use appropriate media for surrounding fire such as CO <sub>2</sub> foam extinguishers	
<b>Special Fire Fighting Procedures:</b> Wear NIOSH/MSHA approved SCBA and full protective equipment. Stop flow of gas if this can be done safely. Use water spray to keep cylinders cool.	
<b>Unusual Fire and Explosion Hazards:</b> Gas cylinders may rupture violently when exposed to fire. Cylinder valve is equipped with a pressure relief device to safely vent the cylinder if it is exposed to elevated pressure in a fire.	

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<b>SECTION 4 – REACTIVITY HAZARD DATA</b>
<b>Stability:</b> Stable
<b>Incompatibility:</b> Oxidizing materials
<b>Hazardous Decomposition or Byproducts:</b> None
<b>Hazardous Polymerization:</b> None

<b>SECTION 5 – HEALTH HAZARD DATA</b>		
<b>Routes of Entry:</b> Inhalation		
<b>Health Hazards (Acute and Chronic):</b> Mixture is a simple asphyxiant which will displace oxygen in air necessary for life.		
<b>Carcinogenicity:</b> NTP? No	<b>IARC Monographs?</b> No	<b>OSHA Regulated?</b> No
<b>Medical Conditions Generally Aggravated by Exposure:</b>		
<b>Emergency and First Aid Procedures:</b> Remove person to uncontaminated area. SCBA may be required to prevent asphyxiation of rescue workers. Keep warm and at rest. Lay victim face down with head and chest lower than hips to improve drainage from lungs. If breathing is labored, administer pure oxygen. If breathing has stopped, start artificial respiration. Get immediate medical attention for serious exposure.		

<b>SECTION 6 – PRECAUTIONS FOR SAFE HANDLING AND USE</b>
<b>Steps to be Taken in Case Material is Released or Spilled:</b> Ventilate enclosed areas. Move leaking cylinder to fume hood or safe outdoor area.
<b>Precautions to be Taken in Handling or Storing:</b> Gas or liquefied gas are to be used with the appropriate pressure regulating control and high pressure equipment. Cylinders should be secured with mounting brackets away from heavily traveled areas. Keep cylinder in dry, cool, well ventilated area away from heat, flame, sparks or corrosive chemicals. Cylinders should be moved by suitable hand trucks.
<b>Other Precautions:</b> Use monitoring equipment if hazardous conditions are suspected or likely to occur.

<b>SECTION 7 – CONTROL MEASURES</b>
<b>Respiratory Protection (Specify Type):</b> Use self-contained breathing apparatus in emergency or rescue situations.
<b>Ventilation:</b> Enclosed area must be provided with general or local exhaust ventilation to avoid hazardous conditions.
<b>Protective Clothing or Equipment:</b> Safety glasses and shoes should be worn when handling high pressure cylinders or hazardous materials.