

GAS INNOVATIONS

MATERIAL SAFETY DATA SHEET (MSDS)

ISOBUTYLENE

PRODUCT IDENTIFICATION

▪D.O.T. SHIPPING NAME	Isobutylene
▪SYNONYM (S)	Liquefied Petroleum Gas, Isobutene, 2 Methylpropene
▪D.O.T. I.D. NUMBER	UN-1055
▪D.O.T. HAZZARD CLASS	2.1 Flammable Gas
▪D.O.T. LABEL (S)	Flammable Gas
▪C.A.S. NUMBER	115-11-7
▪CHEMICAL FORMULA	C ₄ H ₈ or (CH ₃) ₂ C:CH ₂

PHYSICAL DATA

▪MOLECULAR WEIGHT	56.108
▪FREEZING POINT	-140.4°C, -220.6°F
▪BOILING POINT	-6.9°C, 19.6°F
▪VAPOR PRESSURE	168 kPa (gauge), 24.3 psig @21.1°C
▪SPECIFIC VOLUME	0.418m ³ /kg, 6.7 ft ³ /lb @ 1 atm, 21.1°C
▪RELATIVE DENSITY, (air=1)	1.947 @ 1 atm, 25°C
▪SOLUBILITY IN WATER	Negligible
▪DESCRIPTION	At room temperature and atmospheric pressure isobutene is a colorless, flammable gas, with an unpleasant odor. It is shipped as a liquefied gas under its own vapor pressure.

FIRE AND EXPLOSION HAZARD DATA

▪FLAMMABLE LIMITS IN AIR	1.8 – 9.6 % by volume
▪AUTO-IGNITION TEMPERATURE	465°C, 869°F
▪FIRE FIGHTING PROCEDURES	The only safe way to extinguish an isobutylene fire is to stop the flow of gas. If the flow cannot be stopped, let the fire burn out while cooling the cylinder and the surroundings using a water spray. Personnel may have to wear approach type protective suits and positive pressure self-contained breathing apparatus. Firefighters' turnout gear may be inadequate. Small secondary fires may be brought under control by using carbon dioxide or a dry chemical fire extinguisher and stopping the flow.

Date prepared: September 7, 2007

▪ UNUSUAL HAZARDS

1. Cylinders exposed to fire may rupture with violent force. Extinguish surrounding fire and keep cylinders cool by applying water from a maximum possible distance with a water spray.
2. Flammable gases may spread from a spill after the fire is extinguished and be subject to re-ignition.

**HEALTH
HAZARD DATA**

▪ PERMISSIBLE EXPOSURE
LIMITS
▪ ACCUTE EFFECTS
OVEREXPOSURE

OSHA TWA None established.
ASGIH TWA None established.

Isobutylene is a simple asphyxiant. Inhalation of high concentrations may cause rapid respiration, dizziness, fatigue, and nausea. Massive exposure may cause unconsciousness and death. Contact with the liquid phase or with the cold has escaping from a cylinder may cause frostbite.
None known.

▪ CHRONIC EFFECTS
OF OVEREXPOSURE

**FIRST AID
INFORMATION**

▪ INHALATION

Move victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

▪ CONTACT

Treat for frostbite.

**REACTIVITY
DATE**

▪ STABILITY
▪ INCOMPATIBILITY
▪ HAZARDOUS
DECOMPOSITION/
OXIDATION PRODUCTS
▪ POLYMERIZATION

(X) Stable. () Unstable.

Oxidizing materials and compounds that can add across double bonds.

Carbon monoxide, carbon dioxide.

(X) Will not occur () May occur

**SPILL OR
LEAKAGE
PROCEDURE**

Shut off all ignition sources and ventilate the area. For controlling large flow, personnel may have to wear approach-type protective suits and positive pressure self-contained breathing apparatus.

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PRECAUTIONS

- STORAGE RECOMMENDATIONS

Cylinders should be stored and used in dry, cool, well-ventilated areas away from sources of heat or ignition. Do not store with oxidizers

- PERSONAL PROTECTIVE EQUIPMENT

1. Eye protection – Safety glasses should be worn.
2. Respiratory protection – Approved respiratory equipment must be worn when airborne concentrations exceed safe levels.
2. Skin protection – No specific equipment is required. Gloves are recommended for cylinder handling.

- BEFORE USING THE GAS

1. Secure the cylinder to prevent it from falling or being knocked over.
 2. Leak check the lines and equipment.
 3. Have an emergency plan covering steps to be taken in the event of an accidental release.
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DISCLAIMER

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Date prepared: September 7, 2007