

MATERIAL SAFETY DATA SHEETPRODUCT NAME: Iso-Butane
February 2, 2007

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SECTION 4 - FIRST AID MEASURES

INHALATION: Remove affected person to fresh air; provide oxygen if breathing is difficult; if affected person is not breathing, administer CPR and seek emergency medical attention.

SKIN: Wash affected area with soap and water; if irritation persists, seek medical attention.

EYES: Check for and remove contact lenses. Flush eyes with clear running water for 15 minutes while holding eyelids open; if irritation persists, seek medical attention.

INGESTION: Not expected under normal conditions due to gaseous state.

SECTION 5 - FIRE FIGHTING MEASURES**FLASH POINT (METHOD USED)**

-117° F (-82.8° C) TCC

FLAMMABLE LIMITS

LEL: 1.8%

UEL: 8.4%

AUTOIGNITION TEMPERATURE: Not specified**NFPA CLASS:** **IA**

GENERAL HAZARDS: Flammable gas. Propane is heavier than air and may travel a considerable distance to an ignition source. Keep away from open flame and other sources of ignition. Rapid flame propagation and flashback possible. Do not allow smoking in storage areas or when handling. Containers may rupture violently from pressure when involved in a fire situation.

EXTINGUISHING MEDIA

Carbon dioxide, dry chemical.

FIRE FIGHTING PROCEDURES

If possible, stop the flow of gas. Firefighters must wear full facepiece self-contained breathing apparatus in positive pressure mode. Fine water spray can be used to keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers can explode due to buildup of pressure when exposed to extreme heat. Contents under pressure. Do not use or store near heat or ignition source.

HAZARDOUS COMBUSTION PRODUCTS

Smoke, fumes or vapors, oxides of carbon.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: CAUTION - EXTREMELY FLAMMABLE - EXTREMELY VOLATILE - Evacuate and ventilate area, remove all sources of ignition. Product will dissipate rapidly.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep container closed when not in use; protect containers from abuse; protect from extreme temperatures. CAUTION - EXTREMELY FLAMMABLE - keep away from all sources of ignition. "Empty" containers may contain residue which may form explosive vapors. Do not puncture container. Do not attempt to refill container. Maintain well ventilated work areas to minimize exposure when handling this material.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**ENGINEERING CONTROLS**

The use of local exhaust ventilation is recommended to control emissions near the source. Provide mechanical ventilation of confined spaces. Use explosion-proof ventilation equipment.

PERSONAL PROTECTION:

RESPIRATORY PROTECTION: None required while threshold limits are kept below maximum allowable concentrations; if TWA exceeds limits, NIOSH approved respirator must be worn. Refer to 29 CFR 1910.134 or European Standard EN149 13.340.30 for complete regulations.

PROTECTIVE GLOVES: Utilize appropriate gloves for protection needed from cold, based on exposure.

EYE PROTECTION: Chemical splash goggles. Refer to 29 CFR 1910.133 or European Standard EN166 13.340.01.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Safety eyewash station nearby.

WORK / HYGIENIC PRACTICES: Practice safe workplace habits. Minimize body contact with this, as well as all chemicals in general.

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SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE 72 psia @ 100° F)	VAPOR DENSITY (AIR = 1) 2.1
SPECIFIC GRAVITY (WATER = 1) 0.563	EVAPORATION RATE (Water = 1) > 1
SOLUBILITY IN WATER Negligible	FREEZING POINT Not determined
pH Not applicable	APPEARANCE AND ODOR Colorless, odorless gas
BOILING POINT 11° F (- 12° C)	PHYSICAL STATE Gas
VISCOSITY Gas	VOLATILE ORGANIC COMPOUNDS (Total VOC's) 100% VOC

SECTION 10 - STABILITY AND REACTIVITY

STABILITY UNSTABLE: STABLE: X	CONDITIONS TO AVOID: Extreme temperatures, open flames, sparks.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers, strong acids.	
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Decomposition will not occur if handled and stored properly. In case of a fire, oxides of carbon, hydrocarbons, fumes or vapors, and smoke may be produced.	
HAZARDOUS POLYMERIZATION MAY OCCUR: WILL NOT OCCUR: X	CONDITIONS TO AVOID: None

SECTION 11 - TOXICOLOGICAL INFORMATION

Hazardous Ingredients	CAS #	LD50 of Ingredient (Specify Species and Route)	LC50 of Ingredient (Specify Species)
Isobutane	75-28-5	Not established	57 pph / 15 M Inhalation - rat
n-Butane	106-97-8	Not established	658 mg / L / 4H Inhalation - rat

SECTION 12 - ECOLOGICAL INFORMATION

No data is available on the adverse effects of this material on the environment. Neither chemical oxygen demand nor biochemical oxygen demand data are available. Material dissipates rapidly upon release to the environment. None of the ingredients in this mixture are classified as a Marine Pollutant.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of in accordance with local, state, and federal regulations. This product may produce hazardous vapors in a closed disposal container creating a dangerous environment. Refer to 40 CFR 260 - 299 for complete waste disposal regulations. Consult your local, state, or federal agency before disposing of any chemicals.

SECTION 14 - TRANSPORT INFORMATION

PROPER SHIPPING NAME: Isobutane

DOT HAZARD CLASS / Pack Group: 2.1
REFERENCE: 49 CFR 173.306, .304, .314, .315

UN / NA IDENTIFICATION NUMBER: UN 1969
HAZARD SYMBOLS: F
LABEL: FLAMMABLE GAS
Hazard Identification Number (HIN): 23

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG, and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

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SECTION 15 - REGULATORY INFORMATION

TSCA (Toxic Substance Control Act)

All components of this product are listed on the U.S. Toxic Substances Control Act Chemical Inventory (TSCA Inventory) or are exempted from listing because a Low Volume Exemption has been granted in accordance with 40 CFR 723.50.

SARA TITLE III (Superfund Amendments and Reauthorization Act)

311/312 Hazard Categories

Fire hazard, immediate health, sudden release of pressure.

313 Reportable Ingredients:

None

CERCLA (Comprehensive Response Compensation and Liability Act)

None

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

There are no chemicals present known to the state of California to cause cancer or reproductive toxicity.

CPR (Canadian Controlled Products Regulations)

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. WHMIS Classification: A, B1

IDL (Canadian Ingredient Disclosure List)

Components of this product identified by CAS number and listed on the Canadian Ingredient Disclosure List are shown in Section 2.

DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List)

Components of this product identified by CAS number are listed on the DSL or NDSL, or are otherwise in compliance with the New Substances Notification (NSN) regulations. Only ingredients classified as "hazardous" are listed in Section 2 unless otherwise indicated.

SECTION 16 - OTHER INFORMATION

Specific toxicity tests have not been conducted on this product. Our hazard evaluation is based on Information from similar products, the ingredients, technical literature, and/or professional experience.

NFPA HAZARD RATINGS

HEALTH	1	0 = INSIGNIFICANT	3 = HIGH
FLAMMABILITY	4	1 = SLIGHT	4 = EXTREME
INSTABILITY	0	2 = MODERATE	
PERSONAL PROTECTIVE EQUIPMENT	B	Safety Glasses, Gloves	

REVISION SUMMARY:

This MSDS has been revised in the following sections: No changes noted

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The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.