



Ingestion: N/A.

**Chronic Effects:**

None determined.

**Additional Medical and Toxicological Information:**

Contact with full strength or dilute formulations of this product or exposure above and below exposure limits may aggravate pre-existing dermatitis or respiratory disorders in certain individuals. Isobutane and n-butane have been shown to cause mild cardiac sensitization in laboratory test animals.

**4. FIRST AID MEASURES**

Eye Contact: Normally not a concern. If liquid isobutane contacts the eye, immediately flush the area with tepid water. Get medical attention by calling 911.

Skin Contact: Promptly flush the affected area with tepid water. If freeze burns have occurred, apply bulky, dry, sterile bandage to protect affected area. Get immediate medical attention by calling 911.

Inhalation: Remove to fresh air. If breathing has stopped, apply artificial respiration. Get medical attention by calling 911.

Ingestion: None considered necessary.

**Medical Providers:** Medical providers are urged to contact a Regional Poison Center at 1-800-222-1222.

**5. FIRE FIGHTING MEASURES**

Flash Point: -117 °F

Flammable Limits in Air, % by Volume:

Lower: 1.9

Upper: 8.5

Autoignition Temperature: 860°F

Extinguishing Media: Dry chemical, foam, carbon dioxide.

NFPA Ratings: Health 1 Flammability: 4 Reactivity: 0

**Special Fire Fighting Instructions**

BLEVE'S (Boiling Liquid Expanding Vapor Explosions) can occur when a liquid in a pressurized container is heated to temperatures beyond its boiling point. This can lead to failure of the container and damage to the surrounding area.

**General Hazard:**

Vapors may flow on surface for considerable distance, reach an ignition source, and flash back. It can be a dangerous fire and explosion hazard when mixed with air. Continue cooling containers with water well after fire has been extinguished.

## **Fire Fighting Instructions:**

Water may be ineffective on flames but should be used to keep fire-exposed containers cool. Fight fire according to type of materials burning. Do not completely extinguish flame unless gas flow is shut off! Continue cooling containers with water well after fire has been extinguished. Firefighters should wear self-contained breathing apparatus and full protective clothing.

## **6. ACCIDENTAL RELEASE**

Remove source of heat or ignition including internal combustion engines and power tools. Stop gas flow. Keep people away. Stay upwind and warn people downwind of possible explosion. Wear self-contained breathing apparatus if conditions warrant their use.

## **7. HANDLING & STORAGE**

### SAFE HANDLING

- Consult a safety professional to assist in safe site-specific handling of gas cylinders.
- Store in accordance with National Fire Protection Association recommendations.
- Cylinders should be transported with a suitable hand-truck. Do not drag, slide, or roll cylinders.
- Keep the valve protection cap (where provided) tightly secured until the cylinder is ready for use.
- Use designated CGQ fittings and other support equipment (threaded: for gas withdrawal CGA 510, liquid withdrawal CGA 555).
- Leak check system with leak detection solution, never with flame.
- Immediately contact the supplier if there are any difficulties associated with operating the cylinder valve.
- Use an adjustable strap wrench to remove overly tight or rusted caps.

### IMPROPER HANDLING

- Never tamper with pressure relief devices in valves and cylinders.
- Do not heat cylinder to increase the discharge rate of the product from the cylinder.
- Do not use oils or grease on gas-handling fittings or equipment.
- Do not "crack" valve open before connecting it, since self-ignition may occur.
- Never strike an arc on a compressed gas cylinder or cylinder part of an electric circuit.

### SAFE STORAGE

- Store in accordance with National Fire Protection Association recommendations listed in NFPA 58.

- Cylinders should be stored in dry, well-ventilated areas away from sources of heat, ignition and direct sunlight. The storage area should be clear of materials that can burn.
- The temperature where cylinders are stored should not exceed 52 °C (125 °F).
- Cylinders should be stored upright with valve-protection cap in place and firmly secured to prevent falling or being knocked over.
- Cylinders stored in the open should be protected against extremes of weather and from the dampness of the ground to prevent rusting.
- Containers should be stored away from heavy traffic areas and emergency exits. Containers should be stored away from process and production areas, from elevators, building and room exits, or main aisles leading to exits.
- Isobutane gas cylinders should be separated from oxygen cylinders, or other oxidizers, by minimum distance of 20 ft., or by a barrier of non-combustible material at least 5 ft. high, having a fire-resistance rating of at least 30 minutes.
- Storage areas must meet national electrical codes for class 1 hazardous areas. "No smoking or open flames" signs need to be displayed in storage or use areas.
- Installation of leak detection and alarm for storage and use areas should be considered.
- Appropriate extinguishing equipment needs to be in the storage area (i.e., sprinkler system, portable fire extinguishers).
- The smallest amount of natural gas on-site as is necessary. Full and empty cylinders should be segregated. To prevent containers from being stored for long periods of time, use a first-in, first-out inventory system.
- Explosion-proof equipment, non-sparking ventilation systems, and appropriate electrical systems should be used. Electrical equipment used in gas-handling operations or located in storage areas should be non-sparking or explosion proof.
- Use a check valve in the discharge line to prevent hazardous backflow.

## **8. EXPOSURE CONTROL, PERSONAL PROTECTION**

Eye Protection:           Wear chemical safety glasses, safety goggles or face shield where contact with liquid isobutane may occur.

Skin Protection:           Wear insulating gloves and protective clothing when contact with liquid isobutane may occur.

Inhalation:                Self-contained breathing apparatus should be available for non-routine and emergency use.

Ventilation:                Provide adequate general and local ventilation: (1) to maintain airborne chemical concentrations below applicable exposure limits, (2) to prevent accumulation of

flammable vapors and formation of explosive atmospheres, and (3) to prevent formation of oxygen deficient atmospheres [Note: this product may displace oxygen in enclosed areas].

## 9. PHYSICAL & CHEMICAL PROPERTIES

Boiling Point @ 1 atm: 11 °F	Melting Point: -256°F
Vapor Pressure @ 68 °F: 3.1 atm	Vapor Density (Air=1):2.01
% Solubility in H <sub>2</sub> O: Insoluble	pH: N/A
Specific Gravity @ 68 °F & 1 atm: 0.82	Evaporation Rate: N/A
% Volatile by Volume: 100	Molecular Wt: 58.1
Viscosity(method, temp.): N/A	
Appearance: Gas	
Odor: Faint, disagreeable odor	

## 10. STABILITY & REACTIVITY

**Stability:** Stable under normal conditions of use.

**Hazardous Polymerization:** Will not occur.

**Conditions to Avoid/Incompatibilities:** Strong oxidizing agents, heat, sparks, flame and build up of static electricity.

**Hazardous Decomposition Products:** CO, CO<sub>2</sub>

## 11. TOXICOLOGICAL INFORMATION

No data available.

## 12. ECOLOGICAL INFORMATION

No data available.

## 13. DISPOSAL INFORMATION

This product is not a "listed" hazardous waste. But when disposed of in containers may meet the criteria of being an "ignitable" waste. It is the responsibility of the user to determine if the material disposed of meets federal, state, or local criteria to be defined as a hazardous waste.

## 14. TRANSPORT INFORMATION

Identification Number: UN 1969  
Hazard Class: 3 (Flammable gas)

## 15. REGULATORY INFORMATION

### EPA SARA TITLE III

#### **Section 302 EPCRA Extremely Hazardous Substances (EHS)**

Product Component	CAS No.	Wt%	RQ, lb	TPQ, lb
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None

**Section 304 CERCLA Hazardous Substances**

Product Component	CAS No.	Wt%	RQ, lb
None			

**Section 311/312 Hazard Categorization**

Acute:	Chronic:	Fire:	Pressure:	Reactive:
X		X	X	

**Section 313 EPCRA Toxic Substances**

Product Component	CAS No.	Wt.%
None		

Key: RQ = Reportable Quantity  
TPQ = Threshold Planning Quantity of EHS

**CALIFORNIA PROPOSITION 65 WARNING**

Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm may be found in crude oil and petroleum products. Although it is possible to sufficiently refine a crude oil or its end products to remove the potential for cancer, we are advising that one or more of the listed chemicals may be present in some detectable quantities. Read and follow directions and use care when handling crude oil and petroleum products.

**16. OTHER INFORMATION**

THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF THIS COMPANY'S KNOWLEDGE AND BELIEVED ACCURATE AND RELIABLE AS OF THE DATE INDICATED. HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO THE ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY THEMSELVES AS TO THE SUITABILITY AND COMPLETENESS OF SUCH INFORMATION FOR THEIR OWN PARTICULAR USE.

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