

1. PRODUCT AND COMPANY IDENTIFICATION

Product Code: 00012
Product Name: Isobutane
Company Name: Gas Innovations
 18005 E. Hwy 225
 La Porte, TX 77571
Phone Number: +1 (281)471-2200

Web site address: www.gasinnovations.com

Emergency Contact: 3E (within United States) +1 (866)303-2640
Information: Infotrac (outside of United States) +1 (352)323-3500

Synonyms: 2-Methyl Propane, Trimethyl Methane, R-600a (UL Classified)

2. HAZARDS IDENTIFICATION

Flammable Gases, Category 1
 Gas Under Pressure, Compressed gas



GHS Signal Word: Danger

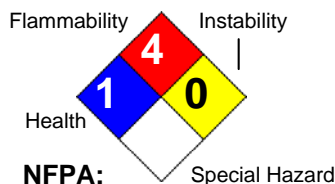
GHS Hazard Phrases: H220 - Extremely flammable gas.
 H280 - Containers gas under pressure; may explode if heated.

GHS Precaution Phrases: P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

GHS Response Phrases: P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
 P381 - Eliminate all ignition sources if safe to do so.

GHS Storage and Disposal Phrases: P410+403 - Protect from sunlight and store in well-ventilated place.

Hazard Rating System:



Potential Health Effects (Acute and Chronic): Inhalation of high concentration may cause rapid respiration, dizziness, fatigue, and nausea. Massive exposure may cause unconsciousness and death. Contact with the liquid phase or with the cold escaping from a cylinder may cause frostbite.

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation. This material can act as a simple asphyxiant by displacement of air.

Skin Contact: May be harmful if absorbed through the skin. May cause skin irritation.

Eye Contact: May cause eye irritation.

Ingestion: May be harmful if swallowed. Aspiration hazard.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration
75-28-5	Isobutane (2-Methylpropane)	100 %

4. FIRST AID MEASURES

Emergency and First Aid

Procedures:

- In Case of Inhalation:** If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- In Case of Skin Contact:** For liquid contact, warm areas gradually and get medical attention if there is evidence of frost bite or tissue damage. Flush area with lukewarm water. Do not rub affected area. If blistering occurs, apply a sterile dressing. Seek medical attention.
- In Case of Eye Contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel.
- In Case of Ingestion:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Signs and Symptoms Of Exposure:

Narcosis, Dermatitis.

Note to Physician:

Consult a physician. Show this safety data sheet to the doctor in attendance. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

5. FIRE FIGHTING MEASURES

- Flash Pt:** -117 F (-82.8 C) Method Used: Open Cup
- Explosive Limits:** LEL: 1.8 %(V) UEL: 8.4 %(V)
- Autoignition Pt:** 860 F (460 C)
- Suitable Extinguishing Media:** Stop the flow of gas. IF the flow cannot be stopped, let the fire burn out while cooling the cylinder and the surrounding areas using a water spray.
- Fire Fighting Instructions:** Personnel may have to wear approach-type protective suits and positive pressure self-contained breathing apparatus. Firefighters' turnout gear may be inadequate. Cylinders exposed to fire may rupture with violent force. Extinguishing surrounding fire and keep cylinders cool by applying water from a maximum possible distance with a water spray. Flammable gases may spread from a spill after the fire is extinguished and be subject to re-ignition. Do not discharge into drains.
- Flammable Properties and Hazards:** CONDITIONS OF FLAMMABILITY: Flammable in the presence of an oxidizing gas (eg air), a source of ignition, and when the concentration of the gas is between the lower and upper explosive limits. Keep away from heat/sparks/open flame/hot surface/oxidizing gas. No smoking. High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide, and oxides of: nitrogen, sulfur, Forms explosive mixtures in air and with oxidizing agents.

6. ACCIDENTAL RELEASE MEASURES

**Protective Precautions,
Protective Equipment and
Emergency Procedures:**

Use proper personal protective equipment as indicated in Section 8.

Environmental Precautions:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Steps To Be Taken In Case
Material Is Released Or
Spilled:**

Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Forms explosive mixtures with air. Immediately evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of ignition if safe to do so. Reduce vapors with fog or fine water spray, taking care not to spread liquid with water. Shut off flow if safe to do so. Ventilate area or move container to a well-ventilated area. Flammable vapors may spread from leak and could explode if reignited by sparks or flames. Explosive atmospheres may linger. Before entering area, especially confined areas, check atmosphere with an appropriate device.

For controlling larger flows, personnel may have to wear approach-type protective suits and self-contained breathing apparatus.

7. HANDLING AND STORAGE

**Precautions To Be Taken in
Handling:**

Take measures to prevent the build up of electrostatic charge. Avoid inhalation of vapor or mist. Keep away from heat, sparks and flame. Keep away from sources of ignition - No smoking. Use spark-proof tools and explosion proof equipment. Use in a closed system. Secure all lines and equipment. Install check valves or traps to prevent suckback to the cylinder. Ground all lines and equipment. Leak check the lines and equipment. Have an emergency plan covering steps to be taken in the event of an accidental release.

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents.

**Precautions To Be Taken in
Storing:**

Cylinders should be stored and used in dry, well-ventilated areas away from sources of heat or ignition. Store away from oxidizers. Protect containers against damage. Do not store above 125F.

Other Precautions:

When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
75-28-5	Isobutane (2-Methylpropane)	No data.	No data.	No data.
Respiratory Equipment (Specify Type):	If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Gas displaces the air and causes a deficiency of oxygen and the possibility of asphyxiation.			
Eye Protection:	Wear safety glasses when handling cylinders; vapor-proof goggles and a face shield during cylinder change out or whenever contact with product is possible. Select eye protection in accordance with OSHA 29 CFR 1910.133.			
Protective Gloves:	Wear appropriate gloves to prevent skin exposure.			
Other Protective Clothing:	Not required under normal use conditions.			
Engineering Controls (Ventilation etc.):	Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.			
Work/Hygienic/Maintenance Practices:	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.			

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States:	[X] Gas [] Liquid [] Solid		
Appearance and Odor:	Appearance: colorless.		
Freezing Point:	No data.		
Boiling Point:	10.9 F (-11.7 C)		
Autoignition Pt:	860 F (460 C)		
Flash Pt:	-117 F (-82.8 C) Method Used: Open Cup		
Explosive Limits:	LEL: 1.8 %(V) UEL: 8.4 %(V)		
Specific Gravity (Water = 1):	0.564		
Density:	NA		
Vapor Pressure (vs. Air or mm Hg):	31 PSI at 70.0 F (21.1 C)		
Vapor Density (vs. Air = 1):	2.01		
Evaporation Rate:	> 1 (Ether=1)		
Solubility in Water:	0.008% at 70.0 F (21.1 C)		
Viscosity:	NA		
Octanol/Water Partition Coefficient:	NA		
pH:	NA		
Percent Volatile:	No data.		
Molecular Formula & Weight:	C4H10	58.12	

10. STABILITY AND REACTIVITY

Stability:	Unstable [] Stable [X]
Conditions To Avoid - Instability:	Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatibility - Materials To Avoid:	Strong oxidizing agents.
Hazardous Decomposition Or Byproducts:	High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide, and oxides of: nitrogen, sulfur, Forms explosive mixtures in air and with oxidizing agents.
Possibility of Hazardous Reactions:	Will occur [] Will not occur [X]
Conditions To Avoid - Hazardous Reactions:	No data available.

11. TOXICOLOGICAL INFORMATION

Toxicological Information:	Epidemiology: No information available. Teratogenicity: No information available. Reproductive Effects: No information available. Mutagenicity: No information available. Neurotoxicity: No information available.
	Other Studies: CAS# 75-28-5: Acute toxicity, TCLo, Inhalation, Species: Human, 280 mg/m3.
Irritation or Corrosion:	No data available.
Carcinogenicity:	NTP? No IARC Monographs? No OSHA Regulated? No

12. ECOLOGICAL INFORMATION

General Ecological Information:	Environmental: No information available. Physical: No information available.
Results of PBT and vPvB assessment:	No data available.
Persistence and Degradability:	No data available.
Bioaccumulative Potential:	No data available.
Mobility in Soil:	No data available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:	Do not attempt to dispose of residual or unused quantities. Return container to supplier. Dispose of contents/containers in accordance with local/regional/national/international regulations.
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14. TRANSPORT INFORMATION

TRANSPORTATION DOCUMENT DESCRIPTION: UN1969 Isobutane (see also Petroleum gases, liquefied (UN1075). 2.1

DOT Proper Shipping Name: Isobutane. see also Petroleum gases, liquefied (UN1075).

DOT Hazard Class: 2.1 FLAMMABLE GAS

UN/NA Number UN1969 Packaging Group II

DOT Special Provisions (49 CFR172.102)

For domestic transportation only, the identification number UN1075 may be used in place of the identification number specified in column (4) of the 172.101 table. The identification number used must be consistent on package markings, shipping papers and emergency response information.



15. REGULATORY INFORMATION

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
75-28-5	Isobutane (2-Methylpropane)	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
75-28-5	Isobutane (2-Methylpropane)	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: No; MA Oil/HazMat: Yes; MI CMR, Part 5: No; NC TAP: No; NJ EHS: Yes - 1040; NY Part 597: No; PA HSL: Yes - 1; SC TAP: No; WI Air: No

CAS #	Hazardous Components (Chemical Name)	International Regulatory Lists
75-28-5	Isobutane (2-Methylpropane)	Canadian DSL: Yes; Canadian NDSL: No; Mexico INSQ: Yes - 1075; Australia ICS: Yes; New Zealand IOC: Yes; China IECSC: Yes; Japan ENCS: Yes - (2)-4; Korea ECL: Yes - KE-24865; Philippines ICCS: Yes; REACH: Yes - (R), (P), C1, M2

16. OTHER INFORMATION

Revision Date: 03/29/2015

Additional Information About No data available.

This Product:

Company Policy or

Disclaimer:

The information, recommendations, and suggestions herein were compiled from reference material and other sources believed to be reliable. However, the SDS's accuracy or completeness is not guaranteed by Gas Innovations or its affiliates, nor is any responsibility assumed or implied for any loss or damage resulting from inaccuracies or omissions. Since conditions of use are beyond our control, no warranties of merchantability of fitness for a particular purpose are expressed or implied. This SDS is not intended as a license to operate under, or a recommendation to infringe on, any patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.