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# Material Safety Data Sheet

## (REFRIGERANT R600a - ISOBUTANE)

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Revision 2019/01/01

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** ISOBUTANE

**CAS NUMBER:** 75-28-5

**CHEMICAL FAMILY:** Aliphatic hydrocarbon

**CHEMICAL FORMULA:** C<sub>4</sub>H<sub>10</sub>

**SYNONYMS:** 2-Methylpropane, Trimethylmethane

**PRODUCT USE:** Industrial and Specialty Gas Applications.

**NAME:** SHANDONG YUEAN CHEMICAL INDUSTRY CO.,LTD

**ADDRESS:** HEZE, SHANDONG, 274000 CHINA

**TELEPHONE NUMBER:** 0086 - 530 - 5333890

**MSDS IDENTIFICATION CODE/NUMBER:** IA

**EMERGENCY TELEPHONE NUMBER:** 0086 - 530 - 5333890

**CHEMTREC TELEPHONE NUMBER:** 0086 - 530 - 5725388

### 2. HAZARD IDENTIFICATION

**Classification in accordance with paragraph (d) of 29 CFR 1910.1200.**

Flammable Gases - Category 1

Gases Under Pressure - Liquefied gas

**GHS Label Elements**

**Symbol(s)**



**Signal Word**

Danger

**Hazard Statement(s)**

Extremely flammable gas.

Contains gas under pressure; may explode if heated.

**Precautionary Statement(s)**

**Prevention**

Keep away from heat/sparks/open flame/hot surfaces - No smoking.

**Response**

Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Eliminate all ignition sources if safe to do so.

**Storage**

Protect from sunlight. Store in a well-ventilated place.

**Disposal**

Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other Hazards**

May cause frostbite upon sudden release of liquefied gas.



### 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS NUMBER	INGREDIENT NAME	PERCENT
75-28-5	ISOBUTANE	≥99.9

### 4. FIRST AID MEASURES

#### EYES

Never introduce oil or ointment into the eyes without medical advice! If pain is present, refer the victim to ophthalmologist for further treatment and follow-up.

#### SKIN

Remove contaminated clothing and flush affected area with cold water and soap. If irritation persists, seek medical attention.

#### INGESTION

Not normally required. Seek immediate medical attention.

#### INHALATION

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO PRODUCT. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given assisted (artificial) respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.

### 5. FIRE FIGHTING MEASURES

#### FLAMMABLE PROPERTIES

**FLASH POINT:** -117°F (-83°C) Closed Cup

**AUTOIGNITION:** -778°F (420°C)

**LOWER EXPLOSIVE LIMIT (%):** 1.8

**UPPER EXPLOSIVE LIMIT (%):** 8.4

#### FIRE AND EXPLOSION HAZARDS.

Isobutene is heavier than air and may travel a considerable distance to an ignition source.

Isobutene is a flammable gas! Keep away from open flame and other sources of ignition. Do not allow smoking in storage areas or when handling.

#### EXTINGUISHING MEDIA

Water, carbon dioxide, Dry chemical

#### FIRE FIGHTING INSTRUCTIONS

If possible, stop the flow of gas with a remote valve. Use water spray to cool exposed containers.



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If fire is extinguished and flow of gas is continues, increase ventilation to prevent a build up of a flammable / explosive atmosphere. Extinguish sources of ignition.

Be cautious of Boiling Liquid Evaporating Vapor Explosion, BLEVE, if flame is impinging on surrounding containers. Direct a 500 GPM water stream onto containers above the liquid level with remote monitors. Limit the number of personnel in proximity to the fire. Evacuate surrounding area to at least 3000 feet in all directions.

## **6. ACCIDENTAL RELEASE MEASURES**

Evacuate all personnel from affected area. Use appropriate protective equipment. Increase ventilation to prevent build up of flammable/explosive atmosphere. Extinguish all sources of ignition! If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call Advanced Gas Tech. or CHEMTREC.

## **7. HANDING AND STORAGE**

Earth bond and ground all lines and equipment associated with the product system. Electrical equipment should be non-sparking and explosion proof. Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide, or roll cylinders. Use a pressure regulator when connecting to lower pressure (250psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130°F (54°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a ‘first in – first out’ inventory system to prevent full cylinders from being stored for excessive periods of time.

Post “No Smoking” signs in storage or use areas.

For additional recommendations consult Compressed Gas Association pamphlet P-1.

Never carry a compressed gas cylinder or container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **ENGINEERING CONTROLS**

Use local exhaust to prevent gas from accumulating. Use general ventilation to prevent build up of flammable concentrations. Use a hood with ventilation when handling small quantities. If product is handled routinely where the potential for leaks exists, all electrical equipment must be rated for



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use in potentially flammable atmospheres. Consult the National Electrical Code for detail.

### **EYE/FACE PROTECION**

Safety goggles or glasses

### **SKIN PROTECTION**

Protective gloved made of plastic of rubber.

### **RESPIRATORY PROTECTION**

Positive pressure air line with full-face mask and escape bottle or self-contained breathing apparatus should be available for emergency use.

### **OTHER/GENERAL PROTECTION**

Safety shoes, safety shower, eyewash.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **BASIC PHYSICAL PROPERTIES**

**BOILING POINT:** 10.9°F -11.8°C

**MELTING POINT:** -255.3 °F -159.6°C

**VAPOR PRESSURE:** (@70 F) 45 psia

**VAPOR DENSITY (AIR=1):** 2.01

**SOLUBILITY (H2O):** Very slight

**Odor:** A colorless, odorless gas.

## **10. STABILITY AND REACTIVITY**

### **Reactivity**

No reactivity hazard is expected.

### **Chemical Stability**

Stable at normal temperatures and pressure.

### **Possibility of Hazardous Reactions**

Will not polymerize.

### **Conditions to Avoid**

Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material.

Containers may rupture or

explode if exposed to heat.

### **Incompatible Materials**

oxidizing materials

### **Hazardous decomposition products**

Oxides of carbon

## **11. TOXICOLOGICAL INFORMATION**

Oxygen deficiency during pregnancy has produced development abnormalities in humans and experimental animals.

No chronic effects data given in the Registry of toxic Effects of Chemical Substances(RTECS) or Sax Dangerous Priorities of industrial Materials, 7th ed.

**12. ECOLOGICAL INFORMATION**

NO DATA GIVEN

**13. DISPOSAL CONSIDERATIONS**

Do not attempt to dispose of waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR GAPS SECURED AND VALVE PROTECTION CAP IN PLACE TO Advanced Gas Technologies for proper handling.

**14. TRANSPORT INFORMATION****PROPER SHIPPING NAME:** Isobutane**HAZARD CLASS:** 2.1**UN/AN#:** UN1969**REQUIRED LABELS:** Flammable Gas**PACKAGE:** Cylinder and Carton**15. REGULATORY INFORMATION**

SARA TITLE NOTIFICATIONS AND INFORMATION

SARA TITLE - HAZARD CLASSES: Acute Health Hazard

Fire Hazard

Sudden release of Pressure Hazard

**16. OTHER INFORMATION**

NFPA HAZARD RATING – HEALTH	1 Slight Hazard
FIRE	4 Severe Hazard
REACTIVITY	0 No Hazard

**MSDS IDENTIFICATION CODE/NUMBER:** IA**DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES**

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