

# Material Safety Data Sheet

## (Isobutane R-600a)

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### 1. PRODUCT AND COMPANY IDENTIFICATION

#### Material Identification

Corporate MSDS Number: HC 600a CAS Number: 75-28-5  
Product Name R-600a  
Chemical Formula C<sub>4</sub>H<sub>10</sub>  
Chemical Name Isobutane  
Product Use refrigerant, foaming agent

#### Company Identification

**MANUFACTURER/DISTRIBUTOR:** Cosutin Industrial CO., Limited  
Add: Unit B, 10/F Lee May Building 788-790 Nathan Road, Mongkok, Kowloon, H.K.  
Tel.: +852 21395855 Fax: +852 81673777  
**PHONE NUMBERS Product Information:** +86 136 31481545  
**Transport Emergency:** +86 136 31481545  
**Medical Emergency:** +86 136 31481545

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name of the substance: Isobutane  
General name: HYDROCARBON  
CAS Number: 75-28-5  
Einecs Number: 200-857-2

Ingredient Name	CAS No.	Typical Wt. %
Isobutane	75-28-5	100%

### 3. HAZARDS IDENTIFICATION

#### Emergency Overview

Liquefied gas. Extremely flammable

#### Potential Health Effects

**INHALATION:** Exposure to vapour concentrations of 1000ppm and above may have the following effects:- drowsiness. Higher concentrations will have the following effects:- anaesthesia.

Acts as a simple asphyxiant, if the oxygen concentration in the air is diluted to below 18% breathing difficulties will result., with loss of consciousness in extreme cases.

Odour does not provide reliable warning of exposure.

SKIN CONTACT: Contact with liquid or refrigerated gas can cause cold burns and frostbite.

EYE CONTACT: Contact with liquid or refrigerated gas can cause cold burns and frostbite.

INGESTION: Not applicable.

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## 4. FIRST AID MEASURES

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**INHALATION:** Remove victim to well ventilated area. Keep victim warm and rested. If there is difficulty in breathing, give oxygen but only under strict medical supervision. If breathing stops or shows signs of failing, apply artificial respiration. Apply artificial respiration if breathing has stopped. Obtain medical attention.

**SKIN CONTACT:** Liquid: Flush skin immediately with large amounts of lukewarm water. Do not apply heat to affected area. Do not allow the victim to smoke or drink alcohol. Obtain medical attention if blistering occurs or redness persists. Do not attempt to remove clothing stuck to the skin.

Gas: Not applicable. No effects expected.

**EYE CONTACT:** Liquid: Immediately flood the eye with plenty of water, preferably warm, for at least twenty minutes, holding the eye open. Cover with a sterile dressing. Obtain medical attention urgently.

Gas: Not applicable. No effects expected.

**INGESTION:** Ingestion is not considered a potential route of exposure.

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## 5. FIRE FIGHTING MEASURES

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**SPECIFIC HAZARDS:** Be aware of possibility of re-ignition. Gas is heavier than air. May form explosive mixtures with air. Exposure to heat or fires may cause cylinders to rupture or explode. Be aware of a Boiling Liquid Expanding Vapour Explosion (BLEVE).

**EXTINGUISHING MEDIA:** Do not extinguish a leaking gas flame unless absolutely necessary. Isolate source of gas if possible. Otherwise, allow fires to burn out under controlled conditions. If fire has to be extinguished, use water spray, alcohol foam, dry chemical or carbon dioxide. Keep containers and surroundings cool with water spray. Disperse accumulating vapour with water spray.

**UNSUITABLE EXTINGUISHING MEDIA:** Do not use water jet.

**PROTECTIVE EQUIPMENT FOR FIREFIGHTERS:** Fire fighters should wear self-contained breathing apparatus, chemical goggles, loose fitting rubber or leather gloves and full aluminised safety suit including hood.

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## 6. ACCIDENTAL RELEASE MEASURES

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### Safeguards (Personnel)

**PERSONAL PROTECTION:** Do not touch spilled liquid. Wear appropriate protective clothing. Wear respiratory protection. Consider need for evacuation. Eliminate all sources of ignition. Beware of gas accumulating to form explosive concentrations. Gas is heavier than air and will collect in basements, depressions, etc. Leaks inside confined spaces may cause suffocation.

**ENVIRONMENTAL PRECAUTIONS:** Try to prevent the material entering drains or water courses. Advise Authorities if spillage has entered water course or sewer or has contaminated soil or vegetation.

**SPILLAGES:** Allow to evaporate if it is safe to do so. Disperse vapour with water spray.

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## 7. HANDLING AND STORAGE

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**Handling:** Use only in well ventilated areas. Avoid inhaling vapour. Avoid contact with eyes, skin and clothing. Those working with this material should be properly trained about its hazards and safe use.

**Storage:** Store in a dry well ventilated place away from sources of heat or ignition and direct sunlight. Storage and transfer equipment should be adequately earthed and bonded to prevent the accumulation of static charges. Pipes which can entrap liquid or vapour require pressure release facilities. Storage tanks should be equipped with water sprays for cooling and have facilities for measuring temperature contents. Suitable storage materials are: mild steel, stainless steel.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Engineering Controls:** Exposure to this material may be controlled in a number of ways. The measures appropriate for a particular work site depend on how the material is used and on the potential for exposure. Engineering methods to prevent or control exposure are preferred.

Methods include process or personnel enclosure, mechanical ventilation (dilution and local exhaust), and control of process conditions. Wherever practicable, the product should be handled within a closed system. If engineering controls and work practices are not effective in preventing or controlling exposure, then suitable personal protective equipment, which is known to perform satisfactorily, should be used.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Physical Data

Form: Liquefied gas under pressure.

Color: colourless

Odor: Faint

Flash point (ASTM D 92): -118 °C at 1,013 hPa

Boiling point/boiling range: -12.7 °C at 1,013 hPa

Auto ignition temperature: 490.0°C

Flammability limits: 1.9 to 8.5 vol. % in air

Liquid density (20°C): 557.0 kg/m<sup>3</sup>

Solubility in water: 49 mg/l. (at 20°C)

Vapor pressure(20°C): 2100 hPa

Partition coefficient: 2.68 Log pow

Relative vapor density: (air = 1) 2.06

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## 10. STABILITY AND REACTIVITY

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### Chemical Stability

**Stability:** Stable under normal conditions. No unusual reactivity.

Conditions to Avoid: High temperatures. Static discharges.

Material to avoid: Oxidising agents.

Decomposition: None known. Combustion will generate: oxides of carbon.

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## 11. TOXICOLOGICAL INFORMATION

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Acute: Low order of acute toxicity.

Sub-acute/subchronic toxicity: There are no reports of adverse long term effects following repeated exposure.

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## 12. ECOLOGICAL INFORMATION

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MOBILITY: The product is volatile/gaseous and will partition to the air phase. If released to air it will disperse rapidly.

PERSISTENCE/DEGRADABILITY Photochemical degradation in air will proceed at a moderate rate. Considered by the United Nations as 'less important' in the formation of episodic ozone.

BIO-ACCUMULATION: Not applicable.

ECOTOXICITY: Not applicable.

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## 13. DISPOSAL CONSIDERATIONS

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Waste Disposal: Allow to dissipate safely to the atmosphere or use as fuel. Dispose of in accordance with local and national regulations. If correctly incinerated this material will decompose to carbon dioxide and water only.

Disposal of containers: Labels should not be removed from containers until they have been cleaned. Do not cut, puncture or weld, on or near the container. Dispose of containers with care. Container should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. After cleaning, all existing labels should be removed. Do not incinerate closed containers.

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## 14. TRANSPORTATION INFORMATION

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### Shipping Information

DOT/IMO	UN number: 1969 Proper shipping name: Isobutane Class: 2 Labelling No.: 2.1
IATA_C	UN number: 1969 Proper shipping name: Isobutane Class: 2 Labelling No.: 2.1
IMDG	UN number: 1969 Proper shipping name: Isobutane Class: 2 Labelling No.: 2.1

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## 15. REGULATORY INFORMATION

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SARA 313 Regulated Chemical(s): This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

LABELLING AND CLASSIFICATION EC: Classification according to directives 67/548/EEC and 1999/45/EC.

SYMBOL(S) EC F+: Extremely flammable.

R PHRASES R12 – Extremely flammable.

S PHRASES S2 - Keep out of reach of children.

S9 - Keep container in well ventilated place.

S16 - Keep away from ignition sources – No Smoking.

S33 – Take precautions against static discharge.

EINECS NUMBER 200-857-2

ANNEX I – Number 601-004-00-0

REGISTRATION TSCA

EINECS

DSL

ENCS

AICS

ECL

PICCS

IGS/IGS Giftliste

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## 16. OTHER INFORMATION

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The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

**End of MSDS**