



Safety Data Sheet

Applicant name: Xiangyang JIN LAIER refrigeration Chemical Industry Co.,Ltd

Product Name: Isobutane

Edit date: 19th May, 2016

Edit institution: Zhejiang Academy of Science and Technology for Inspection and Quarantine

Editor: 袁从慧

Assessor:



Zhejiang Academy of Science and Technology
for Inspection and Quarantine


浙江省检验检疫科学技术研究院
Zhejiang Academy of Science and Technology for Inspection and Quarantine
危险化学品与包装检测实验室
地址: 中国杭州市萧山区建设三路 398 号
Tel: +86 0571 8352 7220. Fax: +86 0571 8352 7219



1. Identification of substance

Product Name	Isobutane
Other Name	R600a
Chemical Name	None
Recommended Use	Mainly used as refrigerant
Manufacturer	Xiangyang JIN LAIER refrigeration Chemical Industry Co.,Ltd
Address	Nanzhang South Chemical industrial Park,Xiangyang,hubei Province /441500
Phone Number	+86-710-3822225
Fax Number	+86-710-3723299
WEB	http://www.jlrhg.com
Emergency Phone Number	+86-13797721118 or call your nearest poison control centre

2. Hazards identification

GHS classification	Flammable gases 1 Gases under pressure(Liquefied gas)
GHS Pictograms	
Signal words	Danger
Hazard statements	H220: Extremely flammable gas H280: Contains gas under pressure;may explode if heated
Precautionary Statement Prevention	P210: Keep away from heat/sparks/open flames/hot surfaces.-No smoking.
Precautionary Statement Response	P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381: Eliminate all ignition sources if safe to do so.
Precautionary Statement Storage	P403: Store in a well-ventilated place. P410+P403: Protect from sunlight. Store in a well-ventilated place.
Other hazards which do not result in classification	Not applicable.

3. Composition/information on ingredients

Substances

Mixtures

Component Information

Component	CAS number	EINECS number	Mass(%)
Isobutane	75-28-5	200-857-2	99.95%wt

4.First-aid measures

NOTE TO PHYSICIAN	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation.
-------------------	---

Component	CAS number	ACGIH TLV-TWA	ACGIH TLV-STEL	NIOSH PEL-TWA	NIOSH PEL-STEL
Isobutane	75-28-5	N.E.	N.E.	800 ppm	N.E.
Appropriate engineering controls	Closed production process, strengthen ventilation. Provide eyewash stations and quick-drench shower facilities at convenient locations.				
General protective and hygienic measures	Do not get this material in contact with skin. Do not get this material on clothing. Avoid contact with eyes. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.				
Personal protective equipment	Wear anti-static work clothes. Wear general protective gloves.				
Breathing equipment	When workers are facing high concentrations they must use appropriate certified respirators.				
Protection of hands	Wear appropriate chemical resistant gloves.				
Eye/Face protection	Use safety glasses with side shields or safety goggles as mechanical barrier for prolonged exposure.				
Body protection	Use clean protective body-covering as needed to minimize contact with clothing and skin.				

Note: 1. N.E. means not established.

9. Physical and chemical properties

Physical state	Liquid(Liquefied gas, liquid at room temperature)
Colour	Colorless
Odour	Slightly odor
Melting point/freezing point	-159.6 °C
Boiling point or initial boiling point and boiling range	-11.8 °C
Flammability	Extremely flammable
Lower and upper explosion limit/ flammability limit	Upper: 8.5% (V), Lower: 1.8%(V)
Flash point	-82.8 (Closed cup)
Auto-ignition temperature	460 °C
Decomposition temperature	No data available
pH	No data available
Kinematic viscosity	No data available
Solubility	Slightly soluble in water, soluble in ether.
Partition coefficient: n-octanol/water(log value)	2.8
Vapour pressure	160.09 kPa (0 °C)
Density and/or relative density	0.56 (water=1)

Relative vapour density(air=1)	2.01
Particle characteristics	Not applicable
10. Stability and reactivity	
Chemical stability	Stable under recommended storage conditions. Do not mix with oxygen or air above atmospheric pressure.
Possibility of hazardous reactions	Not available
Conditions to avoid (e.g. static discharge, shock or vibration)	Heat, flames and sparks. Incompatibles. The extreme temperatures and direct sunlight. Antistatic.
Incompatible materials	Avoid contact with strong oxidizing agents, alkalis, alkaline earth metals (e.g., powdered aluminum, sodium, potassium, zinc).
Hazardous decomposition products	May include halogens, halogen acids, carbon oxides and possibly carbonyl halides.
11. Toxicological Information	
Routes of Entry: Dermal contact, eye contact, inhalation, ingestion.	
Acute Toxicity	
Isobutane (CAS 75-28-5)	LD50 (rat,Oral): N/A LC50 (rat,Inhalation): 220,000 ppm(4 h) LD50 (rabbit,DermaI): N/A
Skin corrosion/Irritation	No data available for this chemical.
Serious eye damage/irritation	No data available for this chemical.
Respiratory or skin sensitization	No data available for this chemical.
Germ cell mutagenicity	Microbial mutagenicity: Salmonella typhimurium 33pph (24 h), in a row. Microsomal mutation: Salmonella typhimurium 33pph (24 h), (consecutive).
Carcinogenicity	No data available for this chemical.
Reproductive toxicity	Poisoning rats inhaled the lowest concentration (TCL ₀): 50,000 ppm (5h, male, 56 days), prostate, seminal vesicle, Cowper's gland, the gland subsidiary, have an impact on the urethral.
STOT-single exposure	No data available for this chemical.
STOT-repeated exposure	No data available for this chemical.
Aspiration hazard	No data available for this chemical.
Chronic Effects	Rabbits, rats, mice inhaled 0.2% concentration, 6h/days, a total of 10 months, no toxicity; When 1.4% oncentration: weight loss, lower serum albumin, globulin increased. See autopsy lung alveolar interstitial thickening, pulmonary

Further Information edema, heart, kidney and nervous system degeneration.
No data

12. Ecological information

Ecotoxicity
Aquatic Toxicity Isobutane (CAS 75-28-5)
Test & Species
96 Hr LC50 fish: N/A
48 Hr EC50 Daphnia: 433 mg/L
72 Hr EC50 Algae: N/A
Persistence and degradability Not available
Bioaccumulative potential Not available
Mobility in soil Not available
Additional Information Not toxic to aquatic life.

13. Disposal considerations

WASTE DISPOSAL INSTRUCTIONS
Contact a licensed professional waste disposal service to dispose of this material.
Dispose of in accordance with local environmental regulations or local authority requirements.

14. Transport information

The Recommendation of Transport of Dangerous Goods(TDG)
UN Number UN 1969
Proper Shipping Name ISOBUTANE
Class/Division Division 2.1 Flammable Gases
Package Group None
Subsidiary risk None
labelling pictogram



Maritime transport IMDG/ Marine pollutant (Yes/No) Being same with TDG/No
Air transport ICAO-TI and IATA-DGR Being same with TDG

15. Regulatory information

European/International Regulations

OSHA: Hazardous by definition of Hazard Communication Standard(29CFR 1910.1200).

After inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Get immediate medical attention.
After skin contact	Immediately flush skin with plenty of water. Remove and isolate contaminated clothing and shoes. If irritation persists, get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.
After eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers. Get medical attention immediately.
After ingestion	Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Loosen tight clothing such as a collar, tie, belt or waistband. Do not use mouth-to-mouth method if victim ingested the substance. Seek immediate medical attention.
Most important symptoms/effects. acute and delayed	A weak stimulus and anesthetic effects. Acute poisoning: mainly headache, dizziness, drowsiness, nausea, drunk, and severe cases can occur in a coma. Chronic effects: headzche, dizziness, poor sleep, fatigue easily.
5. Fire-fighting measures	
Suitable extinguishing agents	Water spray, foam, dry chemical powder, CO ₂ .
Special hazards caused by the material, its products of combustion or flue gases	Vapour/air mixtures are explosive. Vapors may travel a considerable distance to the source of ignition and flash back. Can be released in case of fire: Carbon monoxide, carbon dioxide.
Protective equipment for fire-fighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
6. Accidental release measures	
Person-related safety precautions	Evacuate workers of the contaminated area to ventilated area immediately; set an isolated area; in and out of the area shall be strictly limited. Cut off fire source. Recommended emergency personnel wear positive pressure self-contained breathing apparatus and anti-static overalls. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Measures for environmental protection	Prevent further leakage or spillage if safe to do so. Do not allow material to be released to the environment without

EINECS Status:	Isobutane (CAS 75-28-5) is included in EINECS inventory.
EPA TSCA Status:	Isobutane (CAS 75-28-5) is included in TSCA inventory.
Canadian DSL(Domestic Substances List):	Isobutane (CAS 75-28-5) is included in DSL.
HMIS(Hazardous Material Identification System Ratings):	Health: 1 Flammability: 3 Physical hazard: 1 Personal protection: E (4. Severe Hazard; 3. Serious Hazard; 2. Moderate Hazard; 1. Slight Hazard; 0. Minimal Hazard)
WHMIS(Canadian Workplace Hazardous Material Identification System Ratings):	A, B1.
GB 12268-2012 List of dangerous goods	This chemical is a dangerous goods on the GB 12268-2012 list of dangerous goods.

16. other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

This Material Safety Data Sheet was based on the "Globally Harmonized System of Classification and Labelling of Chemicals", "Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations", "INTERNATIONAL MARITIME DANGEROUS GOODS CODE", "International Air Transport Association Dangerous Goods Regulations", the National Standards and other related dangerous chemicals management laws, regulations and standards, which are periodically updated and changed. To make dangerous goods / hazardous chemicals comply with the relevant requirements of the latest management, regularly update is recommended.

This Material Safety Data Sheet has been compiled in both English and Chinese. For any discrepancies, the Chinese version shall prevail.

Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail
IMDG: International Maritime Code for Dangerous Goods
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

	EINECS: European Inventory of Existing Commercial Chemical Substances
	CAS: Chemical Abstracts Service
	LC50: Lethal concentration, 50 percent
	LD50: Lethal dose, 50 percent
Edit Date	19.05.2016
Update and Revise	Original edition
Edit Standard	<i>Globally Harmonized System of Classification and Labelling for Chemicals Part 1.5</i>
Revised Institution	Zhejiang Academy of Science and Technology for Inspection and Quarantine

