Material Safety Data Sheet

Client	SHANDONG YUEAN CHEMICAL INDUSTRY CO.,LTD
Add. of Client	HEZE,SHANDONG,CHINA 274000
Description	Isobutane
Model /Type	R600a
Trade name	----
Manufacturer	SHANDONG YUEAN CHEMICAL INDUSTRY CO.,LTD
Add. of Manufacturer	HEZE,SHANDONG,CHINA 274000
Date of Receipt	2023-11-10

Laboratory	Dongguan ZRLK Testing Technology Co., Ltd.
Address	Building D, No. 2, Jinyuyuan Industrial Park, No. 18, West Industrial Road, Songshan Lake High-tech Industrial Development Zone, Dongguan City, Guangdong 523808, P. R. China
Approved Signatory	Lieber.Ouyang
Inspected by	Ailis.Ma
Censored by	Lahm Peng

Section 1- Chemical Product and Company Identification

1. Chemical Product Identification

Product name: Isobutane

Model: R600a

2. Company Identification

Manufacturer /Supplier Name: SHANDONG YUEAN CHEMICAL INDUSTRY CO.,LTD

Address: HEZE,SHANDONG,CHINA 274000

Telephone number of the supplier: 0086 – 530- 5725388

Emergency Telephone No.(24h): 0086 – 530- 5725388

Fax:/

E-Mail: ---

This MSDS was prepared by Dongguan ZRLK Testing Technology Co., Ltd.

Referenced documents: ISO 11014:2009 Safety data sheet for chemical products;

Section 2 – Hazards Identification

Classification：

Flammable Gas	Category 2
Specific target organ toxicity (single exposure)	Category 3
Gases under pressure	Compressed Gas

Physical state of the substance when relevant: Flammable Gas

GHS Label elements, including precautionary statements

Signal Word: Warning

Hazard Statement: Flammable Gas

May cause drowsiness or dizziness

Contains gas under pressure; may explode if heated



Precautionary Statement Prevention:

Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Wear protective gloves/protective clothing/eye protection/face protection

Wash face, hands and any exposed skin thoroughly after handling

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Do not spray on an open flame or other ignition source

Pressurized container: Do not pierce or burn, even after Ruse

Skull and crossbones

Precautionary Statement Response:

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

Eliminate all ignition sources if safe to do so.

IF exposed or concerned: Get medical advice/attention

Specific treatment (see supplemental first aid instructions on this label)

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Call a POISON CENTER or doctor if you feel unwell

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

Skin

IF ON SKIN: Wash with plenty of water and soap

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash it before reuse

Precautionary Statement Storage:

Store in a well-ventilated place.

Do not expose to temperatures exceeding 54 °C/130 °F

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.

Store locked up

Protect from sunlight

Precautionary Statement Disposal: Dispose of contents/container to an approved waste disposal plant;

Other information：

Harmful to aquatic life.

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Section 3 – Composition/Information on Ingredients

Common Chemical Name	Concentration (%)	CAS Number
Isobutane	100%	75-28-5

Note: CAS number is Chemical Abstract Service Registry Number.

N/A=Not apply.

Section 4 – First-aid Measures

Inhalation	Leave working area, evacuate to fresh air immediately. Keep respiratory tract open. If breathing is difficult, execute oxygen therapy. If heartbeat or breathing stops, execute artificial respiration, seek medical treatment.
Skin contact	Take off the contaminated cloth, use soapsuds and clean water to fully wash skin for at least 15 minutes. If frostbite, seek medical treatment.
Eye contact	Hold up eyelid, use running clean water or physiological saline solution wash the eye, after that, seek medical treatment.
Ingestion	Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 60 to 240 Ml (2-8 oz.) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility. seek medical attention.

Section 5 – Fire-fighting Measures

Flammable Properties	It does belong to the flammable.
Flash point	Not available
Suitable extinguishing Media	Not available
Unsuitable extinguishing Media	Not available
Explosion Data	The goods do not meet the definitions and criteria for explosives.
Specific Hazards arising from the chemical	Not Applicable
Protective Equipment and precautions for firefighters	Not Applicable
NFPA	Not Applicable

Section 6 – Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedures	Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate personal protective equipment as indicated in Section 8.
Environmental Precautions	Prevent material from contaminating soil and from entering sewers or waterways. Do not let product enter drains.
Methods and materials for Containment	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.
Methods and materials for cleaning up	Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal.

Section 7 – Handling and Storage

Handling	Operate in enclose area with sufficient ventilation. Operators should be specially trained, and rigorously observe the regulation of operation procedure. If the concentration excesses the standard, operator should wear self-contained breathing apparatus protective goggle to prevent gas leak to the air.. When pack or unpack this product, pay attention not to damage cylinder and accessories which should be outfitted with anti-leak emergency management equipment.
Storage	Protect cylinders from physical damage. Store in a well-ventilated place. Do not expose to temperatures exceeding 54 °C/130 °F 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.

Section 8 – Exposure Controls and Personal Protection

Engineering Controls	Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor. Keep away from heat and open flame. Store in a cool, dry place.
Personal Protective Equipment	**Respiratory Protection:** Not necessary. **Skin and body Protection:** Not necessary. **Hand protection:** RUBBER GLOVES. NEOPRENE GLOVES. **Eye Protection:** SAFETY GLASSES WITH SIDE-SHIELDS.
Other Protective Equipment	Have a safety shower and eye wash fountain readily available in the immediate work area.
Hygiene Measures	Do not eat, drink, or smoke in work area. Maintain good housekeeping.

Section 9 - Physical and Chemical Properties

Physical State	Form: A colorless, odorless gas.	
	Color: Colourless	
	Odour: no odor.	
Change in condition:		
pH, with indication of the concentration		Not applicable
Melting point/freezing point		Not available.
Boiling Point, initial boiling point and Boiling range:		-42.1℃
Liquid density:		0.58
Saturated vapour density (boiling point):		Not available.
Critical temperature(K):		Not available.
Critical pressure(MPa):		Not available.
Flash Point		（-83℃）Closed cup
Upper/lower flammability or explosive limits		LOWER EXPLOSIVE LIMIT (%): 1.8 UPPER EXPLOSIVE LIMIT (%): 8.4
Vapor Pressure:		Not applicable
Vapor Density: (Air = 1)		Not applicable

Density/relative density	Not available.
Solubility in Water:	Partially soluble
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Odout threshold	Not available.
Evaporation rate	Not available.
Flammability (soil, gas)	flammable gas
Viscosity	Not applicable

Section 10 - Stability and Reactivity

Stability	The product is stable under normal conditions. Condition that should be avoided: high temperature.
Incompatible Materials	Do not mix with other substances.
Hazardous Decomposition Products	Poisonous HF and carbon-fluorine-oxygen compound.
Possibility of Hazardous Reaction	Not Available

Section 11 - Toxicological Information

It does not belong to toxic substance.

These products are not expected to produce and adverse environmental effects.

Section 12 - Ecological Information

General note:	Not Available
Anticipated behavior of a chemical product in environment/possible environmental impace/ecotoxicity.	Not Available
Mobility in soil	Not Available
Persistence and Degradability	Not Available
Bioaccumulation potential	Not Available
Other Adverse Effects	Not Available

Section 13 – Disposal Considerations

Product disposal recommendation: Observe local, state and federal laws and regulations.

Packaging disposal recommendation: Not Available

Section 14 – Transport Information

Land transport

ADR/RID class: Class 2.1

Proper Shipping Name: Refrigerating machines

UN-Number: UN3358

Packing group: None

According to ADR-2023, this product can be classified as “Not subject to these Regulations”.

Maritime transport

IMDG Class: Class 2.1

Proper Shipping Name: Refrigerating machines

UN Number: UN3358

Marine pollutant: No

Packing group: None

According to International Maritime Dangerous Goods Code 2022 Edition (Amdt.41-22, this product can be classified as “Not subject to these Regulations”.

Air transport

ICAO/IATA Class: Class 2.1

Proper Shipping Name: Refrigerating machines

UN Number: UN3358

Environmental hazards: Not applicable.

Packing group: None

Special precautions for user: Not applicable.

Transport/Additional information: Not dangerous according to the above specifications.

According to 2023 IATA Dangerous Goods regulations 64th Edition, this product can be classified as “Not subject to these Regulations”.

The goods meet the definitions and criteria for Flammable Gas.

Section 15 - Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)

___V___ Hazardous _____ Non-hazardous

Section 16 - Other Information

The information and recommendations contained herein are based on current available data and believed to be accurate and given in good faith; Users should consider this data only as a supplement to other information available from all sources, and should incorporate these into programs for the proper use and disposal of these materials and the health and safety of employees and customers.

**********The End**********