

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	: Isobutanol
Chemical Name	: Isobutanol, Iso-butyl Alchoh
CAS No.	:78-83-1
Product Description	: Chemical for Industrial Use
Supplier	: TASNEE
Contact	: BUChemicalsMarketing@tasnee.com
Address	: Business Gate, Building # C3, King Khalid Int'l Airport Road, P.O. Box 26707, Riyadh 11496, Kingdom of Saudi Arabia
Emergency Telephone Numbers	
Contact at KSA	: +966 (013) 359 7111
Non-emergency Tel.	: +966 (011) 222 2205

2. HAZARD IDENTIFICATION

2.1 Classification

According to Regulation (EU) 1272/2008

Flammable liquids (Category 3), H226

Skin irritation (Category 2), H315

Serious eye damage (Category 1), H318

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 LABELLING

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS] :
Hazard pictograms



Signal word: **DANGER**

Hazard statement(s)

H226: Flammable liquid and vapor.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H335: May cause respiratory irritation.

H336: May cause drowsiness or dizziness.

Precautionary Statements

- P210** : Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P280** : Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P304 + P340 + P312** : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
- P305 + P351 + P338 + P310** : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
- P403 + P235** : Store in a well-ventilated place. Keep cool.

Supplemental Hazard Statements : none

2.3 Other Hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Chemical Listing No.	Content (W/W)	Hazard Classification
Isobutanol (iso-Butyl Alcohol)	CAS No.: 78-83-1	≤ 100 %	Flammable Liquid 3; Skin Irritation 2; Eye Damage 1; STOT SE 3; H226, H315, H318, H336, H335

Classification⁽¹⁾ : According to EU Regulation 1272/2008 (H-Statement)

Classification⁽²⁾ : According to EU Directives 67/548/EEC or 1999/45/EC (R-Phrases)

Please Refer Section 16 for full description of H Statement and R-Phrases

4. FIRST-AID MEASURES**4.1 Description of First Aid Measures**

- General advice** : Consult a physician. Show this safety data sheet to the doctor in attendance.
- Skin contact** : Remove contaminated clothing. Wash off with soap and plenty of water. Wash contaminated clothing before re-use. If skin irritation persists, call a physician.
- Eye contact** : Rinse immediately with plenty of water for at least 15 minutes. Call a physician immediately
- If swallowed** : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
- Inhalation** : If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed:

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of Immediate Medical Attention and Special Treatment Needed

No information available.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Suitable extinguishing media:

Water spray

Dry chemical or carbon dioxide

Alcohol-resistant foam

5.2 Special Hazards Arising from the Product or Mixture

Thermal Decomposition

Carbon oxides

5.3 Advice for Firefighters

Special Protective Equipment for Firefighters: Wear self-contained breathing apparatus and protective suit.

5.4 Further Information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see Section 8.

6.2 Environmental Precautions

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

6.3 Methods and Materials for Containment and Cleaning Up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to Other Sections

For disposal see section 13

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

For precautions see section 2.2.

7.2 Conditions for Safe Storage, Including any Incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Storage class (TRGS 510): Flammable liquids

7.3 Specific End Uses

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control Parameter

Components with workplace control parameters

Chemical Name	Chemical Listing No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Isobutanol (iso-Butyl Alcohol)	CAS No.: 78-83-1	TWA	50 ppm	ACGIH
		TWA	50 ppm 150mg/m ³	NIOSH REL
		TWA	100 ppm 300mg/m ³	OSHA Z-1
		TWA	50 ppm 150mg/m ³	OSHA P0

8.2 Exposure Controls

Appropriate Engineering Controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal Protective Equipment

Eye/face protection

Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of Environmental Exposure

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Appearance Form:	Liquid, clear
Color:	Colorless
Odor:	Alcohol-like
Odor Threshold:	No data available
pH:	No data available

Melting Point/Freezing Point:	Melting point/range: -108 °C - lit.
Initial Boiling Range:	108 °C - lit.
Flash point	28 °C - closed cup
Evaporation Rate:	0.6
Flammability (Solid, Gas):	No data available
Upper explosion limit:	10.6 %(V)
Lower explosion limit:	1.7 %(V)
Vapor pressure:	8 hPa at 20 °C
Vapor Density:	2.55 - (Air = 1.0)
Relative Density:	0.803 g/mL at 25 °C
Water Solubility:	70 g/l at 20 °C – OECD Test Guideline 105 - completely miscible
Partition Coefficient (n-Octanol/Water):	log Pow: 1 at 25 °C
Auto Ignition Temperature:	427 °C
Decomposition Temperature:	No data available
Viscosity:	4.00 mm ² /s at 20 °C
Explosive Properties:	No data available
Oxidizing Properties:	No data available

9.2 Other safety information

Surface tension:	69.7 mN/m at 20 °C
Relative Vapor Density:	2,55 - (Air = 1.0)

NOTE: The physical data presented above are typical values and should not be construed as a specification. Isobutanol has not been tested for properties mentioned above.

10. STABILITY AND REACTIVITY

10.1 Reactivity	: No Data Available
10.2 Chemical Stability	: Stable under recommended storage conditions.
10.3 Possibility of Hazardous Reactions	: No Data Available.
10.4 Conditions to Avoid	: Heat, Flames and Sparks.
10.5 Incompatible Materials	: Strong oxidizing agents, Acid chlorides, Acid anhydrides
10.6 Hazardous Decomposition Products	: Hazardous decomposition products formed under fire conditions - Carbon oxides Other decomposition products - No data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Acute Toxicity

LD50 Oral - Rat - female - 3,350 mg/kg (Isobutanol)
(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - 24.6 mg/l (Isobutanol)

LD50 Dermal - Rabbit - female - 2,460 mg/kg (Isobutanol) (OECD Test Guideline 402)	
LD50 Intraperitoneal - Rat - 720 mg/kg (Isobutanol)	
Skin Corrosion / Irritation:	Rabbit Irritating
Skin irritation - 24 h (Isobutanol)	
Serious Eye Damage / Eye Irritation:	Rabbit Severe Eye Irritation
Risk of serious damage to eyes - 24 h (Isobutanol) (OECD Test Guideline 405)	
Respiratory or skin sensitization:	No data available (Isobutanol)
Germ cell mutagenicity:	Hamster (Isobutanol) fibroblast Result: negative OECD Test Guideline 474 (Isobutanol) Mouse - male and female Result: negative
Carcinogenicity:	IARC(Isobutanol): No component of this Product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity:	
Specific target organ toxicity - single exposure	
May cause respiratory irritation. - Respiratory Tract (Isobutanol)	
May cause drowsiness or dizziness. - Central nervous system (Isobutanol)	
Specific target organ toxicity - repeated exposure	
No data available	
Aspiration hazard	
No data available (Isobutanol)	
Additional Information	
Repeated dose toxicity - Rat - male and female - inhalation (vapor) (Isobutanol)	
RTECS: NP9625000	
Cough, Shortness of breath, Headache, Nausea, Vomiting, Central nervous system depression,	
To the best knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated (Isobutanol) and therefore should not be consider as specification and the should not be used for related analysis and applications. Users of this chemical must identify, thoroughly investigate and aware of the chemical, physical, and toxicological hazard for their intended applications.	

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute Toxicity to Fish	: Flow-through test LC50 - Pimephales promelas (fathead minnow) - 1,430 mg/l - 96 h
Acute Toxicity to Aquatic Invertebrates	: Static test EC50 - Daphnia pulex (Water flea)- 1,100 mg/l - 48 h
Toxicity to algae	: static test EC50 - Pseudokirchneriella subcapitata - 1,799 mg/l - 72 h (isobutanol) (OECD Test Guideline 201)
Toxicity to bacteria	: Growth inhibition IC50 - Sludge Treatment – >1,000 mg/l - 16 h

12.2 Persistence and

Degradability

Biodegradability

Aerobic - Exposure time 28 d (isobutanol)
Result: 70 - 80 % - Readily biodegradable
(OECD Test Guideline 301D)

12.3 Bio-accumulative Potential : No Data Available

Bioaccumulation

12.4 Mobility in Soil : No Data Available

12.5 Results of PBT and vPvB Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other Adverse Effects

Hazardous to the Ozone Layer : No Data Available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 1212

IMDG: 1212

IATA: 1212

14.2 UN proper shipping name

ADR/RID: ISOBUTANOL

IMDG: ISOBUTANOL

IATA: ISOBUTANOL

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user

No data available

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture: This safety datasheet complies with the requirements of Regulation EC / OSHA Guidelines: Not Classified

15.2 Chemical Safety Assessment: For this product, a chemical safety assessment was not carried out

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

- H226 Flammable liquid and vapor.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H319 Causes Serious Eye Irritation
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.

TASNEE has not performed technical or clinical testing on the suitability of isobutanol in use involving human contacts. This is the sole responsibility of the user to find the safety of use of this chemical for their intended use.

NOTE:

The information contained in this SDS is to the best of TASNEE knowledge and believed accurate and reliable as of the date indicated, however, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own use.