

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	: n-Butanol
Chemical Name	:n-Butanol,1-Butanol, n-Butyl Alcohol, Butyl Alcohol
CAS No.	:71-36-3
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

Acute toxicity, Oral (Category 4), H302

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.

H302: Harmful if swallowed.

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.
P301 + P312 + P330	: IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
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
n-Butanol (n-Butyl Alcohol)	CAS No.: 71-36-3	≥100 %	Flammable Liquid 3; Acute Toxicity 4; Skin Irritation 2; Eye Damage 1; STOT SE 3; H226, H302, 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. Do not take clothing home to be laundered.
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	: Move to fresh air. Oxygen or artificial respiration if needed. Call a physician immediately.

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 Specific Hazards During Firefighting:

Vapors can travel to a source of ignition and flash back. Heated containers can explode.

5.4 Advice for Firefighters

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

5.5 Further Information

Explosion Hazard: Fight advanced fires from a protected location. Cool containers / tanks with water spray.

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

Airborne Exposure Limits:

OSHA Permissible Exposure Limit (PEL) :100 ppm

ACGIH Threshold Limit Value (TLV) :20 ppm (TWA)

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

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:	No data available
Odor Threshold:	No data available
pH:	No data available
Melting Point/Freezing Point:	-90 °C - lit.
Initial Boiling Range:	116 - 118 °C - lit.
Flash point	35 °C - closed cup
Evaporation Rate:	No data available
Flammability (Solid, Gas):	No data available
Upper explosion limit:	11.2 %(V)
Lower explosion limit:	1.4 %(V)
Vapor pressure:	5 hPa at 20 °C
Vapor Density:	2.56 - (Air = 1.0)
Relative Density:	0.81 g/cm ³ at 25 °C
Water Solubility:	Soluble
Partition Coefficient (n-Octanol/Water):	No data available
Auto Ignition Temperature:	No data available
Decomposition Temperature:	No data available
Viscosity:	No data available
Explosive Properties:	No data available
Oxidizing Properties:	No data available

9.2 Other safety information

Relative Vapor Density: 2,56 - (Air = 1.0)

NOTE: The physical data presented above are typical values and should not be construed as a specification. N-Butanol 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	: Oxidizing agents, Alkali Metals, Bases, Strong Acids, Halogens.
10.6 Hazardous Decomposition Products	: Other decomposition products - No data Available, In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Acute oral toxicity	: LD50 rat 790 mg/kg
	Remarks: Liver: Fatty liver degeneration. Kidney, Ureter, Bladder: Other changes. Blood: Other changes
Acute inhalation toxicity	: LC50 rat 4 h 8000 ppm
Acute dermal toxicity	: LD50 rabbit 3400 mg/kg
Skin Corrosion / Irritation	: rabbit Irritating Result: Skin irritation - 24 h
Serious Eye Damage / Eye Irritation	: rabbit Severe Eye Irritation Result: Blindness (OECD Test Guideline 405)
Sensitization	: No Data Available
Carcinogenicity	: IARC: 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.
Mutagenicity	: No Data Available
Reproductive Toxicity	: No Data Available
Specific Target Organ Systemic Toxicity (Single Exposure)	: May Cause Respiratory Irritation May Cause Drowsiness or Dizziness
Specific Target Organ Systemic Toxicity (Repeated Exposure)	: No Data Available
Aspiration Hazard	: No Data Available
Additional Information	: Drying, Cracking of the skin, Skin irritation To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute Toxicity to Fish : LC50 - Pimephales promelas (fathead minnow)- 1.840 mg/l - 96 h

Acute Toxicity to Aquatic Invertebrates : EC50 Daphnia Magna 48 h OECD Test - 1.840 mg/l - 48 h

12.2 Persistence and Degradability : No Data Available

Biodegradability

12.3 Bio-accumulative Potential Bioaccumulation Oncorhynchus mykiss (rainbow trout)-24h-921mg/l Bioconcentration factor (BCF): 0.38

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: 1120

IMDG: 1120

IATA: 1120

14.2 UN proper shipping name

ADR/RID: BUTANOLS

IMDG: BUTANOLS

IATA: Butanols

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.**

H225 Highly flammable liquid and vapor

H226 Flammable liquid and vapor.

H301 Toxic if swallowed

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways

H311 Toxic in contact with skin

H314 Causes severe skin burns and eye damage

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes Serious Eye Irritation

H331 Toxic if inhaled

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H361 Suspected of damaging fertility or the unborn child

H370 Causes damage to organs

H373 May cause damage to organs (central nervous system, liver, heart) through prolonged or repeated exposure.

H402 Harmful to aquatic life

TASNEE has not performed technical or clinical testing on the suitability of n-Butanol 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.