Date of issue for the 1st edition : 04/Mar/2014
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Safety Data Sheet

Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier:
Product name: 1-Butanol
Reference number(SDS):63130jis_E1-4
Product type:
Reagent
Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses of the product: Research and Development
Uses advised against: Do not use for other purposes.
Details of the supplier of the safety data sheet
Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.
Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan
Division: Quality Assurance Department
Telephone number: +81-48-986-6161
FAX: +81-48-989-2787
e-mail address: shiyaku-t@junsei.co.jp

Section 2. Hazards identification

GHS classification and label elements of the product
Classification of the substance or mixture
PHYSICAL AND CHEMICAL HAZARDS
Flammable liquids: Category 3
HEALTH HAZARDS
Skin corrosion/irritation: Category 2
Serious eye damage/eye irritation: Category 1
Specific target organ toxicity - single exposure: Category 3 (Respiratory tract irritation)
Specific target organ toxicity - single exposure: Category 3 (Narcotic effects)
Specific target organ toxicity - repeated exposure: Category 1 (central nervous system, auditory organ)
(Note) GHS classification without description: Not classified/Classification not possible
Label elements

Signal word: Danger
HAZARD STATEMENT
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
H372-Causes damage to organs through prolonged or repeated exposure
PRECAUTIONARY STATEMENT

Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Do not breathe dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wash contaminated parts thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response

In case of fire: Use water mist, foam, dry powder, CO2 to extinguish.
Specific treatment is required.
Get medical advice/attention if you feel unwell.
Immediately call a POISON CENTER/doctor/physician.
Call a POISON CENTER/doctor/physician if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Specific Physical and Chemical hazards

Flammable liquid. Vapor/air mixture may explode.

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Common name, synonyms: n-Butyl alcohol

Ingredient name:1-Butanol

Content Extra For Fluorometry (%):99.8 <

Guaranteed Reagent (%):99.0 <

Pure (%):98.0 <

Chemical formula:C4H10O

ENCS:2-3049

CAS No.:71-36-3

MW:74.12

EC No.:200-751-6

Note : The figures shown above are not the specifications of the product.

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

Immediately call a POISON CENTER/doctor/physician.

Keep victim warm and quiet.

Call emergency medical service.

Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Give artificial respiration if victim is not breathing.

Administer oxygen if breathing is difficult.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

Remove and isolate contaminated clothing and shoes.

In case of burns, immediately cool affected skin for as long as possible with child water.

Do not remove clothing if adhering to skin.

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/doctor/physician.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth. Do NOT induce vomiting.

IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

Give nothing to drink.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Cough. Sore throat. Burning sensation. Shortness of breath. Headache. Dizziness. Drowsiness. Abdominal pain. Nausea. Vomiting. Diarrhoea. Unconsciousness.

(Symptoms when skin and/or eye contact)

Redness. Pain. Dry skin. Burns.

Indication of any immediate medical attention and special treatment needed

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

water mist, foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Cool container with water spray.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

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

Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

PUBLIC SAFTY: Ventilate closed spaces before entering.

Do not touch or walk through spilled material.

Environmental precautions

Runoff to sewer may create fire or explosion hazard.

Vapor explosion hazard indoors, outdoors or in sewers.

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

Methods and materials for containment and cleaning up

Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Use clean non-sparking tools to collect absorbed material.

All equipment used when handling the product must be grounded.

Collect leaking liquid in sealable containers.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Prevent entry into waterways, sewers, basements or confined areas.
Keep out of low areas.

Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Precautions)

Avoid contact with skin.
Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
When using do not eat, drink or smoke.

Any incompatibilities

Strong oxidizing agents, Aluminium should not be mixed with the chemicals.

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.
Do not eat, drink or smoke when using this product.
Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Store in a well-ventilated place. Keep container tightly closed.
Keep cool. Protect from sunlight.
Store in accordance with local/national regulation.
Store locked up.

Container and packaging materials for safe handling

Keep only in original packaging.

Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

Section 8. Exposure controls/personal protection

Control parameters

Control value and Concentration standard value under ISHA

Japan control value 25ppm

Occupational Exposure Limit

JSOH

(Ceiling) 50ppm; 150mg/m3 (skin)

ACGIH

TWA: 20ppm (Eye & URT irr)

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Individual protection measures

Respiratory protection

Select and wear respiratory protection in accordance with approved standards (e.g. JIS T8150).

Recommended respiratory protection : Gas mask

Hand protection

Wear protective gloves. Recommended material(s): nitrile, butyl rubber, viton

Inspect before use and replace worn or damaged gloves.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Chemical-resistant, impervious gloves complying with an approved standard (e.g. JIS T8116) should be used.

Eye protection

Wear chemical safety goggle.

Wear eye/face protection in accordance with approved standards (e.g. JIS T8147).

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

Personal protective equipment for the body and skin should be selected based on the task being performed and the risks involved.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor: Characteristic odor

Odor threshold data is not available.

Melting point/Freezing point: -90℃

Boiling point or initial boiling point: 117℃

Boiling range data is not available.

Flammability: Ignitable

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 1.4 vol %

Upper explosion limit: 11.3 vol %

Flash point: 29℃(C.C.)

Auto-ignition temperature: 345℃

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

pH: 7 (70g/L, 20℃)
Dynamic viscosity: 2.95mPa･s(20℃)
Kinematic viscosity: 2.11mm2/s(40℃)
Solubility:
Solubility in water: 77g/liter
Solubility in solvent: Very soluble in acetone; miscible with ethanol and diethyl ether.
Partition coefficient n-octanol/water: log Pow0.9
Vapor pressure: 0.67 kPa (20℃)
Vapor density data is not available.
Density and/or relative density: 0.81g/cm3(20℃)
Relative vapor density (Air=1): 2.6
Relative density of the Vapor/air - mixture at 20℃ (Air = 1): 1.01
Particle characteristics data is not available.
Other information
Critical temperature data is not available.
Evaporation rate data is not available.
VOC data is not available.

Section 10. Stability and Reactivity

Reactivity
Reactivity data is not available.
Chemical stability
Stable under normal storage/handling conditions.
Flammable.
Possibility of hazardous reactions
Reacts with aluminium when heated to 100℃ and strong oxidants such as chromium trioxide.
This produces flammable/explosive gas.
Attacks some forms of plastic(e.g. Polyvinyl chloride), rubber(e.g. Natural rubber) and coatings.
Conditions to avoid
Contact with incompatible materials.
Open flames. Heating. Sparks.
Incompatible materials
Strong oxidizing agents. Aluminium.
Hazardous decomposition products
Carbon oxides. Hydrogen gas.

Section 11. Toxicological Information

Information on toxicological effects
Acute toxicity
Acute toxicity (Oral)
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
[NITE-CHRIP]
rat LD50: 2.1 g/kg (source: NITE)

Acute toxicity (Dermal)
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
[NITE-CHRIP]
rabbit LD50: 3402 mg/kg (source: NITE)
Acute toxicity (Inhalation)
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
[NITE-CHRIP]
mist: rat LC50: 8000 ppm (source: NITE)

Irritant properties
Skin corrosion/irritation
[Product]
Category 2, Causes skin irritation
[Data for components of the product]
[NITE-CHRIP]
Category 2 (source: NITE)
Serious eye damage/irritation
[Product]
Category 1, Causes serious eye damage
[Data for components of the product]
[NITE-CHRIP]
Category 1 (source: NITE)

Sensitization
Respiratory sensitization
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.
Skin sensitization
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Germ cell mutagenicity
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Carcinogenicity
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]

[EPA]
Group D; Not Classifiable as to Human Carcinogenicity(1986)

Reproductive toxicity
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Specific target organ toxicity (STOT)
STOT-single exposure
[Product]
Category 3, May cause respiratory irritation
Category 3, May cause drowsiness or dizziness
[Data for components of the product]
[NITE-CHRIP]
Category 3 (Respiratory tract irritation), Category 3 (Narcotic effects) (source: NITE)

STOT-repeated exposure
[Product]
Category 1, Causes damage to organs through prolonged or repeated exposure
[Data for components of the product]
[NITE-CHRIP]
Category 1 (central nervous system, auditory organ) (source: NITE)

Aspiration hazard
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Section 12. Ecological Information

Ecotoxicity

Aquatic toxicity
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
Hazardous to the aquatic environment, short-term (acute)
[NITE-CHRIP]
Fish (Oryzias latipes) 96-hour LC50: > 100 mg/L (OECD TG 203, GLP) (source: NITE)
Crustacea (Daphnia magna) 48-hour EC50: > 1000 mg/L (OECD TG 202, GLP) (source: NITE)
Algae (Raphidocelis subcapitata) 72-hour ErC50: > 1000 mg/L (OECD TG 201, GLP) (source: NITE)
Hazardous to the aquatic environment, long-term (chronic)
[NITE-CHRIP]
Crustacea (Daphnia magna) 21-day NOEC: 4.1 mg/L (OECD TG 202_1984, GLP) (source: NITE)
Algae (Raphidocelis subcapitata) 72-hour NOErC: 180 mg/L (OECD TG 201, GLP) (source: NITE)

Water solubility
[Data for components of the product]

not poorly water-soluble (77 g/L) (source: NITE)

Persistence and degradability

[Data for components of the product]

Rapidly degradable (A 20-day degradation rate: 92% (by BOD)) (source: NITE)

Bioaccumulative potential

[Data for components of the product]

log Kow: 0.9 (source: ICSC, 2024)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Dispose of contents/container in accordance with local/national regulation.

Section 14. Transport Information

UN No., UN CLASS

UN Number or ID Number : 1120
UN Proper Shipping Name :
BUTANOLE
Class or division (Transport hazard class) : 3
Packing group : III
ERG GUIDE No.: 129
Special provisions No.: 223

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 1120
UN Proper Shipping Name :
BUTANOLE
Class or division (Transport hazard class) : 3
Packing group : III
Special provisions No.: 223

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 1120
UN Proper Shipping Name :
BUTANOLE
Class or division (Transport hazard class) : 3
Hazard labels : Flamm. liquid
Packing group : III
Special provisions No.: A3

Environmental hazards

Marine pollutants (yes/no) : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Noxious Liquid Substances ; Cat. Z

1-Butanol
Flammable Liquid
1-Butanol
MARPOL Annex V - HME (Harmful to the Marine Environment)
Specific target organ toxicity - repeated exposure: cat.1
1-Butanol

Section 15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
U.S. Toxic Substances Control Act (TSCA) Inventory
Chemicals listed in TSCA Inventory
71-36-3
All components are listed or exempted.
Superfund Amendments and Reauthorizations Act (SARA), Title III
SARA 313 (TRI)
1-Butanol
Other regulatory information
We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.
Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.
Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).
Chemical safety assessment
Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

Section 16. Other information

GHS classification and labelling
H226-Flammable liquids, Category 3: H226 Flammable liquid and vapour
H315-Skin corrosion/irritation, Category 2: H315 Causes skin irritation
H318-Serious eye damage/eye irritation, Category 1: H318 Causes serious eye damage
H335-STOT - single exposure, Category 3, Respiratory tract irritation: H335 May cause respiratory irritation.
H336-STOT - single exposure, Category 3, Narcotic effects: H336 May cause drowsiness or dizziness.
H372-STOT - Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure
References and sources for data
Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 23rd edit., 2023 UN
IMDG Code, 2024 Edition (Incorporating Amendment 42-24)
IATA Dangerous Goods Regulations (66th Edition) 2025
2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2025 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019
JIS Z 7253 : 2019
Recommendation of occupational exposure limits (2023-2024) (JSOH)
Notification No. 0111-1 (January 11, 2022), Chemical Hazards Control Division, Industrial Safety and Health Department, Labour Standards Bureau, MHLW in Japan
Supplier's data/information
Chemicals safety data management system "GHS Assistant" Version 4.35
(https://www.asahi-ghs.com/)
NITE Chemical Risk Information Platform "NITE-CHRIP"
(https://www.chem-info.nite.go.jp/chem/chrip/chrip_search/systemTop)
GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.1) (May. 2024, METI)

Abbreviations and acronyms

SDS (Safety Data Sheet)
LD50 (Lethal Dose, 50%)
LC50 (Lethal Concentration, 50%)
IARC (International Agency for Research on Cancer)
ACGIH (American Conference of Governmental Industrial Hygienists)
EPA (US Environmental Protection Agency)
NTP (US National Toxicology Program)
METI (Ministry of Economy, Trade and Industry in Japan)
MHLW (Ministry of Health, Labour and Welfare in Japan)
MOE (Ministry of the Environment in Japan)
JSOH (Japan Society for Occupational Health)
ISHA (Industrial Safety and Health Act in Japan)
CSCL (Chemical Substances Control Law in Japan)
EU (European Union)
EC50 (Effective Concentration, 50%)
NOEC (No Observed Effect Concentration)
BOD (Biochemical Oxygen Demand)
COD (Chemical Oxygen Demand)
BCF (Bioconcentration Factor)
anh (anhydride)

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.
The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.
The GHS classification data given here is based on current Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2023).