

SAFETY DATA SHEET

SDS No.1021-15105

Date

November 6, 2017

1/4 page

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : n-Butanol
NAME OF SUPPLIER : GL Sciences Inc.
ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan
CHARGE SECTION : International Sales Section
TELEPHONE No. : +81-3-5323-6620
FACSIMILE No. : +81-3-5323-6621
PRODUCT No. : 1021-15105
SDS No. : 1021-15105
Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Flammable liquid : Category 3
Skin corrosion/irritation : Category 2
Eye damage/irritation : Category 2
Specific target organ toxicity (Single exposure) : Category 3(respiratory irritation, an esthesia)
Specific target organ toxicity (Repeated exposure) : Category 1(central nervous system, auditory organ)

HAZARD SYMBOL :



SIGNAL WORD : Danger

HAZARD STATEMENTS :

H226 Flammable liquid and vapour
H315 Cause skin irritation
H319 Cause serious eye irritation
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness
H372 Cause damage to organs through prolonged or repeated exposure<central nervous system, auditory organ>

PRECAUTIONARY STATEMENTS :

P210 Keep away from heat/sparks/open flames/hot surfaces. –No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe fume/gas/mist/vapours.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P303+P361+ P353 IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water/shower.
P370+P378 In case of fire: Use appropriate media such as chemical powder or carbon dioxide to extinguish.
P362+P364 Take off contaminated clothing and wash it before reuse.
P305+ P351+ P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical attention.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P314	Get medical attention if you feel unwell.
P403+ P233+P235	Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with all applicable regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY	: n-Butanol
SYNONYMS	: n-Butyl alcohol, Butanopl-1-on
CONTENT	: > 99 %
CHEMICAL FORMULA	: CH ₃ (CH ₂) ₃ OH
MOLECULAR WEIGHT	: 74.12
CAS No.	: 71-36-3
TSCA INVENTORY	: Listed
EINECS No.	: 200-751-6
EC INDEX No.	: 603-004-00-6

4. FIRST AID MEASURES

GENERAL ADVICE	: Consult a physician. Show this safety data sheet to the doctor in attendance.
INHALATION	: Move victim to fresh air. If breathing is difficult, give oxygen. If irritation persists, consult a physician.
SKIN CONTACT	: Remove contaminated clothes and shoes, rinse skin with plenty of water or shower. Use soap to help assure removal. Consult a physician immediately.
EYE CONTACT	: Flush eyes well with flooding large amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If possible, remove any contact lenses. Consult a physician immediately.
INGESTION	: Rinse mouth, give plenty of water to dilute the substance. Do not induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician immediately.

MOST IMPORTANT SYMPTOMS AND EFFECTS

: This substance is anesthetic and has harmful effects on the liver, kidney and heart. This may cause to cough, sore throat, nausea, headache, dizziness and loss of consciousness etc.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA	: Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
FIRE & EXPLOSION HAZARDS	: Toxic, irritating, dust/fume/smoke may be emitted. Carbon monoxide may be foamed.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS	: Firemen should wear normal protective equipment(full bunker gear) and positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	: Remove ignition sources and ventilate the area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid raising dust and avoid contact with skin and eyes.
ENVIRONMENTAL PRECAUTIONS	: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
METHODS FOR CLEAN UP	: Do not touch spilled material without suitable protection. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

HANDLING	: Keep away from ignition sources and ventilate the area – No smoking. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with eyes, skin, and clothing. Avoid inhalation of vapour or mist. Avoid prolonged or repeated exposure. Handle this product with suitable protection. Wear protections when cutting ample and treating this product.
STORAGE	: Store away from sunlight, heat and all ignition sources in well-ventilated dry place. Keep container tightly closed. Keep cool(2 ~ 10°C).
INCOMPATIBLE PRODUCTS	: Strong oxidizers, acids

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES	: Use exhaust ventilation to keep airborne concentrations below exposure limits. Use adequate ventilation.
VENTILATION	: Local Exhaust ; Necessary, Mechanical(General) ; Necessary
CONTROL PARAMETERS	
ACGIH	: TWA 20 ppm
OSHA	: TWA 100 ppm
NIOSH	: C 50 ppm
PERSONAL PROTECTION	
RESPIRATORY PROTECTION	: Use respirators approved under appropriate government standards and follow all regulations.
HAND PROTECTION	: Chemical resistant gloves
EYE PROTECTION	: Safety glasses(goggles)
SKIN PROTECTION	: Protective clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	: Colorless, clear liquid
ODOR	: Characteristic odor
pH	: No data available
BOILING POINT	: approx.117 °C
MELTING POINT	: -90 °C
FLASH POINT	: 29 °C (TCC)
EXPLOSIVE LIMITS	: 1.4 ~ 11.3 vol %
VAPOR PRESSURE	: 0.6 kPa (at 20°C)
VAPOR DENSITY	: 2.6
SPECIFIC GRAVITY	: 0.810 g/cm ³ (at 20/4°C)
SOLUBILITY IN	
Water	: Miscible
Organic solvent	: Miscible
PARTITION COEFFICIENT ; n-octanol/water	: log Pow: 0.88
AUTOIGNITION TEMPERATURE	: 345 °C
DECOMPOSITION TEMPERATURE	: No data available

10. STABILITY AND REACTIVITY

REACTIVITY	: Stable under recommended storage conditions.
CHEMICAL STABILITY	: Deteriorated by sun-light.
CONDITION TO AVOID	: Sunlight, heat, open flames, high temperature, sparks, static electrical charge, other ignition sources, moisture
INCOMPATIBLE MATERIALS	: Oxidizers and strong acids
HAZARDOUS DECOMPOSITION PRODUCTS	: CO, CO ₂

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY	: Oral; rat LD50=700 ~ 4,360 mg/kg (EHC 65,1987 etc.) Dermal; rabbit LC50=3,400 ~ 5,300 mg/kg (Hazard assessment report vol.4,2005 etc.) Inhalation; rat LC50=8,000 ppm (Hazard assessment report vol.4,2005)
SKIN CORROSION/IRRITATION	: Human; dermatitis (SIDS,2005 etc.) Rabbit; moderate irritating (SIDS,2005)
EYE DAMAGE/EYE IRRITATION	: Rabbit; moderate to strong irritating. Human; eye irritating (e.g. keratitis) (SDIS,2005 etc.)
SENSITIZATION	: No data available
GERM CELL MUTAGENICITY	: in vivo; mouse, Negative. in vitro; mouse, negative. (SIDS(2005),ACGIH(7th,2001),NTP DB(Access on June 2013),EHC 65(1987)
CARCINOGENICITY	: This substance is classified in D(IRIS,1991).
REPRODUCTIVE TOXICITY	: Effect to rat baby, but there are no data regarding male/female sexual function or fecundity. (EHC 65,1987 etc.)

SPECIFIC TARGET ORGAN TOXICITY - single exposure -

: Human; Mild irritation to throat (PATTY(6th,2012) etc.), headache by inhalation (EHC 65(1987) etc.)

SPECIFIC TARGET ORGAN TOXICITY - repeated exposure -

: Effect to human (dizziness, headache, hearing loss)(ACGIH(7th,2001) etc.)

ASPIRATION HAZARD

: No data available

12. ECOLOGICAL INFORMATION

ECOTOXICITY

: Killifish; LC50>100 mg/L,96h

Daphnia magna; EC50>1,000 mg/L,48h

(Aquatic toxicity tests of chemicals conducted by Ministry of the Environment in Japan,1996)

BIODEGRADABILITY

: BOD20=92 % (SIDS,2005)

BIOACCUMULATIVE POTENTIAL

: No data available

MOBILITY IN SOIL

: No data available

OTHER ADVERSE EFFECTS

: Not listed in Montreal Protocol list.

13. DISPOSAL INFORMATION

Dispose in a hazardous-waste site in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environment agency for specific rules).

14. TRANSPORT INFORMATION

IATA

UN NUMBER : 1120

UN PROPER SHIPPING NAME : Butanol

CLASS : 3, flammable liquid

PACKING GROUP : III

ADR/RID : 1120, Butanol, III

DOT : 1120, Butanol, III

MARINE POLLUTANT : No

15. REGULATORY INFORMATION

US REGULATIONS : Labeling according to EC Directives; See section 2

EU REGULATIONS : Labeling according to EC Directives; See section 2

16. OTHER INFORMATION

NOTICE:

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

Attention:

This product in terms of chemical identity and the unit amount provide is intended for use in chemical analysis and not for human consumption, nor any other purpose.