SAFETY DATA SHEET

SDS No. 1021-43040 Date August 28, 2014 1/4 page

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : Butanoic Acid

NAME OF MANUFACTURER : 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. : 1021-43040 SDS No. : 1021-43040

Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Flammable liquids : Category 4

Acute toxicity - dermal - : Category 3
Skin corrosion/irritation : Category 1
Eye damage/eye irritation : Category 1

Specific target organ toxicity (Single exposure)

: Category 2(lung)

Hazardous to the aquatic environment - Acute hazard

: Category 3

HAZARDS SYMBOL







SIGNAL WORD : Danger

HAZARD STATEMENTS :

H227 Combustible liquid.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage

H318 Causes serious eye damage
H371 May cause damage to organs

H402 Harmful to aquatic life

PRECAUTIONARY STATEMENTS:

P210 Keep away from heat, hot surface, sparks, open flames and other

ignition sources. No smoking.

P280 Wear eve protection or face protection.

P260 Do not breathing dust/fume/gas/mist/vapours/spray.
P264 Wash hands and eyes thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

P378+P380 In case of fire: Use appropriate medias to extinguish. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse

skin with water.

P363 Wash contaminated clothing before reuse.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P310 Immediately call a POISON CENTER or doctor.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing.

P308+P311 IF exposed or concerned: Call a POISON CENTER or doctor.

P403 Store in a well-ventilated place.

P405 Store locked up.

P501 Dispose of contents/container in accordance with all applicable regulations.

PRODUCT NAME : Butanoic Acid

SDS No. 1021-43040 Date August 28, 2014 2/4 page

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY : Butanoic Acid **SYNONIMS** Butyric acid

CHEMICAL FOMULA CH3(CH2)2COOH

CONTENT > 99.0% CAS No. 107-92-6 **TSCA INVENTRY** Listed EINECS No. 203-532-3 607-135-00-X EC INDEX No.

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air. If breathing is difficult, give oxygen. 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.

separating the eyelids with sterile fingers. Consult a physician.

EYE CONTACT Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by

Rinse mouth, give plenty of water to dilute the substance. Do not induce INGESTION

vomiting. Never give anything by mouth to an unconscious person. Consult a

physician immediately.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water spray.

FIRE & EXPLOSION HAZARDS : Toxic, irritating, fumes or smoke may be emitted.

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.

ENVIROMENTAL PRECATIONS

: Prevent spills from entering sewers, watercourses or low areas.

METHODS FOR CLEAN UP Do not touch spilled material without suitable protection. After material is

completely picked up, wash the spill site with soap and water and ventilate the area. Pull all wastes in a plastic bag for disposal and seal it tightly. Remove,

clean, or dispose contaminated clothing.

7. HANDLING AND STORAGE

HANDLING : Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated

exposure. Handle this product with suitable protection.

After using this product, dispose of contents/container in accordance with all

applicable regulations and appropriate ways.

STORAGE Store away from sunlight in well-ventilated dry place.

Keep container tightly closed.

INCOMOPATIBLE PRODUCTS Strong oxidizers and acids, strong bases.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits.

Use only with adequate ventilation.

VENTILATION Local Exhaust; Necessary, Mechanical(General); Recommended

PERSONAL PROTECTION

RESPRATORY PROTECTION Safety mask(Use respirators approved under appropriate government

standards and follow all regulations.)

HAND PROTECTION : Protective gloves

EYE PROTECTION Safety glasses(goggles) SKIN PROTECTION Protective clothing

SDS No. 1021-43040 Date August 28, 2014 3/4 page

CONTROL PARAMETERS

OSHA PEL : Not established ACGIH : Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : Colorless - Almost colorless

SHAPE : Oily liquid

ODOR : characteristic odor pH : strongly acidic (aq.)

BOILING POINT : 163 $^{\circ}$ C MELTING POINT : -8 $^{\circ}$ C

FLASH POINT : 76 °C / 169 °F

FLAMMABILITY : lower 2.0% upper 10.0%

AUTOIGNITION TEMPERATURE : No data available VAPOR PRESSURE : 1.12Pa (20 °C) VAPOR DENCITY : 3.06(air=1) DENSITY : 0.960

SOLUBILITY IN

Water : miscible
Organic solvent : miscible
PARTITION COEFFICIENT: n-octanol/water

: No data available

DECOMPOSITION TEMPERATURE

: No data available

10. STABILITY AND REACTIVITY

REACTIVITY : Stable under recommended storage conditions.

CHEMICAL STABILITY : No data available

CONDITION TO AVOID : Sunlight, heat, ignition sources, oxidizers, metals

INCOMPATIBILE MATERIALS : Strong oxidizers, acids, bases, metals

HAZARDOUS DECOMPOSITION PRODUCTS

: CO, CO2

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY-dermal: rabbit LD50=530mg/kg(PATTY (5th, 2001))
SKIN CORROSION/IRRITATION : rabbit List 1 (PATTY (5th, 2001)) severe irritant,

rabbit List 2 (IUCLID (2000) (OECD Guide-line 404) corrosive

EYE DAMAGE/EYE IRRITATION : Rabbit:severe corneal burns (PATTY (5th, 2001))

GERM CELL MUTAGENICITY : No data available CARCINOGENICITY : No data available REPRODUCTIVE TOXICITY : No data available SPECIFIC TARGET ORGAN TOXICITY-single exposure

: No data available

SPECIFIC TARGET ORGAN TOXICITY- repeated exposure

: No data available

ASPIRATION TOXICITY : No data available

ADDITIONAL INFORMATION

NTP : Not listed IARC : Not listed OSHA : Not listed ACGIH : Not listed

12. ECOLOGICAL INFORMATION

ECOTOXICITY: LC50: Daphnia magna: 61mg/L/48h (HSDB, 2006).

BIODEGRADABILITY : No data available BIOACCUMULATION POTENTIAL : No data available MOBILITY IN SOIL : No data available

OTHER ADVERSE EFFECTS : Not listed in Montreal Protocol.

PRODUCT NAME: Butanoic Acid

SDS No. 1021-43040 Date August 28, 2014 4/4 page

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 : 2820

UN PROPER SHIPPING NAME : Butanoic Acid CLASS or DIVISION : 8, Corrosive

PACKING GROUP : III

ADR/RID : 2820, Butanoic Acid
DOT : 2820, Butanoic Acid

MARINE POLLUTANT : Not classified

15. REGULATORY INFORMATION

US REGULATIONS: : Labeling according to US Directives; See section 2
EU REGURATIONS : 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.