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**JUNSEI****Safety Data Sheets****1. Identification**

Product name :1,4-Butanediol

Name of supplier :JUNSEI CHEMICAL CO., LTD.

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Product code(SDS NO) :63300jis_E1-1

2. Hazards identification

GHS classification and label elements of the product

GHS classification

HEALTH HAZARDS

Acute toxicity Oral : Category 4

Serious eye damage /eye irritation : Category 2

(Note) GHS classification without description : Not applicable/Out of classification/Not classifiable



Signal word : Warning

HAZARD STATEMENT

Harmful if swallowed.

Causes eye irritation

PRECAUTIONARY STATEMENT

Prevention

Wash contaminated parts thoroughly after handling.

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

Wear face protection.

Response

Rinse mouth.

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

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Disposal

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

3. Composition/information on ingredients

Substance/Preparation :Substance

Common name, synonyms :1,4-Butylene glycol

Ingredient name:1,4-Butanediol

content(%):98.0 <

Chemical formula:C4H10O2

Chemicals No, Japan:2-235
CAS No.:110-63-4
MW:90.12
ECNO:203-786-5

4. First-aid measures

IF INHALED

Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN (or hair)

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

IF IN EYES :

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.

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

5. Fire-fighting measures

Suitable extinguishing media

In case of fire, use water mist, foam, dry powder, CO2

Specific hazards arising from the chemical

Containers may explode when heated.

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

Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/retardant clothing.

Wear cold insulating gloves/face shield/eye protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area after material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Avoid release to the rivers, lakes, ocean, groundwater.

Methods and materials for neutralization, containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Collect spillage.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Use personal protective equipment as required.

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Exhaust/ventilator

Exhaust/ventilator should be available.

Safety treatments

Avoid contact with skin.

Avoid contact with eyes.

Avoid breathing dust, vapor, mist, or gas.

Safety Measures/Incompatibility

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

When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities

Recommendation for storage

Keep container tightly closed.

Keep cool . Protect from sunlight.

Store in well-ventilated place.

8. Exposure controls/personal protection

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Protective equipment

Respiratory protection

Wear positive pressure self-contained breathing apparatus (SCBA).

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.

Safety and Health measures

Wash ... thoroughly after handling.

9. Physical and Chemical Properties

Physical properties

Appearance :VISCOUS LIQUID

Color :COLOURLESS

odour data N.A.

pH data N.A.

Phase change temperature

Initial Boiling Point/Boiling point :228°C

Melting point/Freezing point :20°C

Decomposition temperature data N.A.

Flash point :(O.C.) 121°C

Auto-ignition temperature :350°C

Explosions data N.A

Vapor pressure :133 Pa (38°C)

Relative Vapor Density (Air=1) :3.1

Specific gravity/Density :1.02
Solubility
Solubility in water :1000g/liter (20°C)
n-Octanol /water partition coefficient data N.A

10. Stability and Reactivity

Stability

Stable under normal storage/handling conditions.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heat.

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon oxides

11. Toxicological Information

Symptoms related to the physical, chemical and toxicological characteristics

Acute toxicity

Oral

Rat LD50 = 1.8 g/kg(SIDS,2000)

Dermal

Rat LD50 > 5.0 g/kg(SIDS,2000)

Vapor inhalation

Rat LC50 > 5.1 g/m3/4h(SIDS,2000)

Irritant properties

Skin corrosion/irritation

Rabbit : slight irritating(SIDS,2000)

Serious eye damage /irritation

Rabbit : slight irritating(SIDS,2000)

No Allergenic and sensitizing effects data available

No Mutagenic effects data available

No Teratogenic effects data available

No Carcinogenic effects data available

No Toxicity for reproduction data available

No Delayed/chronic effects from short/long-term exposure data available

No Aspiration hazard data available

12. Ecological Information

Ecotoxicity

No Aquatic toxicity data available

Water solubility

(1,4-Butanediol)

1000g/L(20°C)(HSDB)

No Bioaccumulative potential data available

13. Disposal Considerations

Disposal methods

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

14. Transport Information

UN No, UN CLASS

Not applicable to UN NO.

15. Regulatory Information

GHS classification and labelling

Acute Tox. 4 : H302 Harmful if swallowed.

Eye Irrit. 2 : H319 Causes serious eye irritation

US major regulations

TSCA

1,4-Butanediol

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (4th ed., 2011), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 17th edit. UN

Classification, labelling and packaging of substances and mixtures (reg.(EC) No 1272/2008)

2012 EMERGENCY RESPONSE GUIDEBOOK(US DOT)

2013 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/monoeval/grlist.html>

Supplier's data/information

Chemical Risk Information Platform (CHRIP)(NITE) <http://www.safe.nite.go.jp/japan/db.html>

GHS Classification Guidance for Enterprises 2013 Revised Edition (August, 2013,METI)

Other information

This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It are advised to make their own test

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 Japan official data, EU official data