Date of issue for the 1st edition : 01/May/2014
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Safety Data Sheet

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

Product identifier:

Product name: Dibutyl phthalate

Reference number(SDS):63245jis_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

HEALTH HAZARDS

Skin sensitization: Category 1

Reproductive toxicity: Category 1B

Specific target organ toxicity - single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity - repeated exposure: Category 1 ((respiratory organs)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 1

Hazardous to the aquatic environment, long-term (chronic): Category 2

(Note) GHS classification without description: Not classified/Classification not possible

Label elements

Signal word: Danger

HAZARD STATEMENT

H317-May cause an allergic skin reaction

H360-May damage fertility or the unborn child

H335-May cause respiratory irritation

H372-Causes damage to organs through prolonged or repeated exposure

H400-Very toxic to aquatic life

H411-Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Avoid release to the environment.

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.
Contaminated work clothing should not be allowed out of the workplace.
Use personal protective equipment as required.
Do not eat, drink or smoke when using this product.

Response

Collect spillage.
Get medical advice/attention if you feel unwell.
IF exposed or concerned: Get medical advice/attention.
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 skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.

Storage

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

Disposal

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

Other hazards

Endocrine disrupting properties (Article 57f - human health) in REACH SVHC candidate list
Dibutyl phthalate
Endocrine disrupting properties (Article 57f - environment) in REACH SVHC candidate list
Dibutyl phthalate

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:Dibutyl phthalate
Content (%):99.0<
Chemical formula:C16H22O4
ENCS:3-1303
CAS No.:84-74-2
MW:278.35
EC No.:201-557-4

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

Components contributing to the hazard

Toxic for reproduction (Article 57c) in REACH SVHC candidate list
Dibutyl phthalate
Endocrine disrupting properties (Article 57f - human health) in REACH SVHC candidate list
Dibutyl phthalate
Endocrine disrupting properties (Article 57f - environment) in REACH SVHC candidate list
Dibutyl phthalate

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.
Call emergency medical service.

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.

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/doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Nausea. Abdominal pain. Diarrhoea. Vomiting.

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes. Pain of the eyes.

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

In case of fire, use 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.

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.
Do not touch or walk through spilled material.

Environmental precautions

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

Methods and materials for 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.

Stop leak if you can do it without risk.

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.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

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 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.

Contaminated work clothing should not be allowed out of the workplace.

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 are not available in ISHA.

Adopted value

JSOH(1996) 5mg/m3

ACGIH(1990) TWA: 5mg/m3 (Testicular dam; 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, PVC

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 safety glasses with side-shields.

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: Viscous liquid

Color: Colorless～Yellow

Odor: Characteristic odor

Odor threshold: 0.26～1.47 mg/m3

Melting point/Freezing point: -35℃

Boiling point or initial boiling point: 340℃

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 0.5 vol %(235℃)

Upper explosion limit: 2.5 vol %(235℃)

Flash point: 157℃(Closed cup)

Auto-ignition temperature: 402℃

Decomposition temperature data is not available.

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

pH data is not available.

Dynamic viscosity: 20.3mPas(20℃)

Kinematic viscosity: 18.8mm2/s(20℃)

Solubility:

Solubility in water: 11.2mg/L(25℃)

Solubility in solvent: Miscible with ethanol, diethyl ether, benzene; soluble in carbon tetrachloride.

n-Octanol/water partition coefficient: log Pow4.72

Vapor pressure: <0.01kPa (20℃)

Density and/or relative density: 1.046～1.050 g/ml(20℃)

Relative vapor density (Air=1): 9.58

Relative density of the Vapor/air - mixture at 20℃ (Air = 1): 1.00

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

Runaway polymerization will not occur.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

As a result of flow, agitation, etc., electrostatic charges can be generated.

Decomposes on burning. This produces toxic and irritating fumes.

Reacts with strong oxidants.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heating.

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon oxides, Phthalic anhydride

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[GHS Cat. Japan, base data]

rat LD50=6300 mg/kg(EU-RAR, 2004)

Acute toxicity (Dermal)

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[GHS Cat. Japan, base data]

rabbit LD50 >4000 mg/kg(EHC 189, 1997)

Acute toxicity (Inhalation)

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

[GHS Cat. Japan, base data]

mist : rat LD50 >=15.68 mg/L(EU-RAR, 2004)

Irritant properties

Skin corrosion/irritation

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[GHS Cat. Japan, base data]

rabbit (OECD TG404) : not irritating(EU-RAR, 2004)

Serious eye damage/irritation
[Product]
Based on available data, the classification criteria are not met.
[Data for components of the product]
[GHS Cat. Japan, base data]
rabbit (OECD TG405) : not irritating(EU-RAR, 2004)

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]
Category 1, May cause an allergic skin reaction
[Data for components of the product]
[GHS Cat. Japan, base data]
cat. 1; JSOH recommendation, 2012

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]
Category 1B, May damage fertility or the unborn child
[Data for components of the product]
[GHS Cat. Japan, base data]
cat. 1B; NITE Initial Risk Assessment Report, 2005

Specific target organ toxicity (STOT)
STOT-single exposure
[Product]
Category 3, May cause respiratory irritation
[Data for components of the product]
[cat.3 (respiratory tract irritation)]
[GHS Cat. Japan, base data]
respiratory tract irritation (ACGIH 7th, 2001)
STOT-repeated exposure
[Product]
Category 1, Causes damage to organs through prolonged or repeated exposure
[Data for components of the product]
[cat.1]
[GHS Cat. Japan, base data]
respiratory system (EU-RAR, 2004)

Aspiration hazard
[Product]
Classification not possible (Insufficient data available or no data available).

[Data for components of the product]
No data available.

Information on other hazards

Endocrine disrupting properties

Endocrine disrupting properties (Article 57f - human health) in REACH SVHC candidate list
Dibutyl phthalate

Section 12. Ecological Information

Ecotoxicity

Aquatic toxicity

[Product]
Category 1, Very toxic to aquatic life
Category 2, Toxic to aquatic life with long lasting effects

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[GHS Cat. Japan, base data]
Algae (Pseudokirchneriella subcapitata) EC50=0.4mg/L/96hr (AICS IMAP, 2019)

Hazardous to the aquatic environment, long-term (chronic)

[GHS Cat. Japan, base data]
Fish (Oncorhynchus mykiss) NOEC=0.1mg/L/99days (NITE Initial Risk Assessment Report, 2005)

Water solubility

[Data for components of the product]
11.2mg/L(25℃) (PHYSPROP Database; REACH Registration dossier)

Persistence and degradability

[Data for components of the product]
Rapidly degradable [BOD_Degradation : 69%/2 weeks (J-CHECK, 2023)]

Bioaccumulative potential

[Data for components of the product]
log Pow=4.72 (ICSC, 2002)

Mobility in soil
Mobility in soil data is not available.

Endocrine disrupting properties

Endocrine disrupting properties (Article 57f - environment) in REACH SVHC candidate list
Dibutyl phthalate

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
Avoid release to the environment.
Dispose of contents/container in accordance with local/national regulation.

Section 14. Transport Information

UN No., UN CLASS
UN Number or ID Number : 3082
UN Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class or division (Transport hazard class) : 9
Packing group : III
ERG GUIDE No.: 171

IMDG Code (International Maritime Dangerous Goods Regulations)
UN Number or ID Number : 3082
UN Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class or division (Transport hazard class) : 9
Packing group : III
IATA (Dangerous Goods Regulations)
UN Number or ID Number : 3082
UN Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class or division (Transport hazard class) : 9
Hazard labels : Miscellaneous & Environmentally hazardous
Packing group : III
Environmental hazards
Marine pollutants (yes/no) : yes
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Noxious Liquid Substances ; Cat. X
Dibutyl phthalate
MARPOL Annex V - HME (Harmful to the Marine Environment)
Reproductive toxicity: cat.1, 1A, 1B
Dibutyl phthalate
Specific target organ toxicity - repeated exposure: cat.1
Dibutyl phthalate
Hazardous to the aquatic environment - short-term (acute): cat.1
Dibutyl phthalate
Hazardous to the aquatic environment - long-term (chronic): cat.1, 2
Dibutyl phthalate

Section 15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list
Toxic for reproduction (Article 57c)
Dibutyl phthalate
Endocrine disrupting properties (Article 57f - human health)
Dibutyl phthalate
Endocrine disrupting properties (Article 57f - environment)
Dibutyl phthalate
U.S. Toxic Substances Control Act (TSCA) Inventory
Chemicals listed in TSCA Inventory
84-74-2
All components are listed or exempted.
Superfund Amendments and Reauthorizations Act (SARA), Title III
SARA 313 (TRI)
Dibutyl phthalate
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

H317-Skin sensitization, Category 1: H317 May cause an allergic skin reaction
H360-Reproductive toxicity, Category 1B: H360 May damage fertility or the unborn child
H335-STOT - single exposure, Category 3, Respiratory tract irritation: H335 May cause respiratory irritation.
H372-STOT - Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure
H400-Hazardous to the aquatic environment, short-term (acute), Category 1: H400 Very toxic to aquatic life
H411-Hazardous to the aquatic environment, long-term (chronic), Category 2: H411 Toxic to aquatic life with long lasting effects

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN
IMDG Code, 2022 Edition (Incorporating Amendment 41-22)
IATA Dangerous Goods Regulations (65th Edition) 2024
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2024 TLVs and BEIs. (ACGIH)
JIS Z 7252 : 2019
JIS Z 7253 : 2019
2023 Recommendation on TLVs (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 4.30 (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 Japan official data (NITE published in 2022).