

SAFETY DATA SHEET

SDS: A5002-0000_E001

Date Prepared: 2019/07/04

Date Revised: 2023/01/10

Product Name: **BUTYL DI GLYCOL**

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

Product name:	BUTYL DI GLYCOL
Identification of the supplier:	Nippon Nyukazai Co., Ltd.
Address:	No.4-1.Nihonbashi Kobuna-cho, Chuo-ku, Tokyo 103-0024, Japan
Charge section:	Business Operation Department (TEL:+81-3-5651-5640,FAX:+81-3-5651-5646)
Emergency telephone number:	Business Operation Department (TEL:+81-3-5651-5640,FAX:+81-3-5651-5646)
Recommend use:	diluent , Detergent , deposition aid , reaction solvent
Restrictions on use:	Seek expert judgment when using for purposes other than those recommended.

2. Hazards identification

Hazard category		
Flammable liquids		Category 4
Serious eye damage/eye irritation		Category 2A

Label elements

Hazard pictograms:



Signal word:	Warning
Hazard statements:	H227 Combustible liquid H319 Causes serious eye irritation.

Precautionary statements:

Prevention	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P264 Wash hands and face thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Response	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 advice/attention. P370+P378 In case of fire : Use appropriate extinguishing media for extinction.
Storage	P403 Store in a well ventilated place.
Disposal	P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

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3. Composition/information on ingredients

3.1. Substances

Ingredients and Concentration

Ingredient Name	Concentration wt. %	CAS RN®	Existing and New Chemical Substances (JAPAN)	Industrial Safety and Health Law Substances (JAPAN)	Industrial Safety and Health Law (JAPAN)	Pollutant Release Transfer Register Law (JAPAN)	Poisonous and Deleterious Substances Control Act (JAPAN)
			Gazette notice reference number	Gazette notice reference number	Notifiable Substances	Specified Substances	Poisonous and Deleterious Substances
Diethyleneglycol mono butyl ether	99-100	112-34-5	2-422, 7-97	2-(8)-99,2-(8)-317	Applicable	Not applicable	Not applicable

3.2. Mixtures

Not Applicable

4. First aid measures

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is stopped, lie on your back and perform cardiopulmonary respiration. Get medical advice/attention.
Skin contact:	Take off contaminated clothing and wash before reuse. Wash with plenty of soap and water. If skin irritation or a rash occurs: Get medical advice/attention.
Eye contact:	Immediately flush eye with plenty of clean water for at least 15 minutes. (If easy to do, remove contact lenses, if worn.) Get medical attention immediately.
Ingestion:	After having swallowed it, Drink a large quantity of water when consciousness becomes clear and receive treatment for the doctor immediately. A mouth must not give a person without the consciousness a thing.
Protection for first aid person:	The rescuer wears a tool for appropriate protection depending on the situation.

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5. Firefighting measures

Suitable extinguishing media:	Use water spray(fog), foam, dry chemical or CO2.
Extinguishing media to avoid:	Straight stream water.
Specific hazards arising from the chemical:	At the time of fire, hazardous gases (carbon monoxide and others) can be generated.
Fire fighting:	Keep upwind of fire. Eliminate all ignition sources if safe to do so. In case of fire in the surroundings, move the content/container to the safety place. If it is not possible to move, cool the content/container with water spray.
Special protective equipment and precautions for fire fighters:	Gloves, protection glasses, wear fire,flame resistant,retardant clothing, air respiratory organs wear a tool for appropriate protection.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Promptly remove possible ignition sources from the vicinity. Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.
Environmental precautions:	To environment (area of the sea, the soil) must not release it.
Methods and materials for containment and cleaning up:	Absorb this product with inactive materials (example: dry sand, earth) and recover it into a waste material container. In the case of large amount, stop leakage with earth/sand to begin with, and, then, recover it. In the case of a small quantity, I adsorb it in the earth and sand, a waste and collect it in empty container which I can seal up after having removed it.

7. Handling and storage

Handling	
Technical measures:	During handling, be sure to wear proper protective equipment (refer to the section 8). This product can be charged with static electricity. Take countermeasures for static electricity removal (grounding, others). Wear antistatic clothes and antistatic shoes to prevent human body electrification. Use explosion-proof electrical/ventilating/lighting equipment.
Ventilation requirements:	Use the ventilation equipment described in Section 8.
Precautions for safe handling:	Not especially.

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Storage

Storage conditions: Store the containers avoiding direct sunlight. Store in less than 40°C in a well-ventilated room.

Safety adequate container materials: Use the container specified by the Fire Service ACT and the United Nations Transport Regulations.

8. Exposure controls/personal protection

Appropriate engineering controls: Use local ventilation equipment.
Install eye and body washing facilities near the handling place.
Display the position of equipment clearly.

Control parameters

Ingredient Name	Industrial Safety and Health Law (JAPAN)	Japan Society for Occupational Health	ACGIH-TLV	
	Administrative Control Levels	Occupational Exposure Limits	TWA	STEL
Diethyleneglycol mono butyl ether	Not established	Not established	10ppm Inhalable fraction and vapor, -mg/m ³	Not established

Personal protective equipment

Respiratory protection: Use a gas mask for organic gases, air-supplied respirator, self-contained compressed air breathing apparatus on the situation.

Hand protection: Organic solvent impermeable protective gloves (Antistatic ones are desirable.)

Eye/face protection: Protective glasses, goggle, protective face shield.

Skin/body protection: Wear long-sleeved working clothes and protective shoes.(Antistatic ones are desirable.)
Use an oiliness apron-resistant, boots depending on the situation.

Hygiene measures: Wash with soap and water after handling.

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9. Physical and chemical properties

Product

Form:	Liquid (20°C)
Color:	Colorless transparent
Odor:	Faint Odor
Melting point/freezing point:	< -70(°C)
Initial boiling point and boiling range:	225(°C)
Flammability (solid, gas):	No data
Upper/lower flammability or explosive limits:	0.4–24.6(%)
Flash point:	78(°C) (Closed Cup) 120 (Open Cup)
Auto-ignition temperature:	227(°C)
Decomposition temperature:	No data
pH:	No data
Kinematic viscosity:	No data
Solubility:	water : Soluble.
Partition coefficient: n-octanol/water:	No data
Vapour pressure:	1.33(Pa)(20°C)
Specific Gravity:	0.954(20°C)
Vapour density:	No data
Evaporation rate:	≤1
Particle characteristics:	No data

10. Stability and reactivity

Chemical stability:	Stable under normal temperatures and pressures.
Possibility of hazardous reactions:	It may react with the oxidizing agent and generate heat.
Conditions to avoid:	Avoid heat, flames, sparks and ignition sources.
Incompatible materials:	Acid, Oxidizing agents.
Hazardous decomposition products:	No data available

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Product Name: **BUTYL DI GLYCOL****11. Toxicological information**

Product

Acute toxicity (oral):	No Classification
Acute toxicity (dermal):	No Classification
Acute toxicity (inhalation):	Classification not possible (Gas) Classification not possible (Vapour) Classification not possible (Dust/Mist)
Skin corrosion/irritation:	No Classification
Serious eye damage/irritation:	Category 2A
Respiratory sensitization:	Classification not possible
Skin sensitization:	Classification not possible
Mutagenicity:	Classification not possible
Carcinogenicity:	Classification not possible
Reproductive toxicity:	Classification not possible
Target organ effect/Single exposure:	Classification not possible
Target organ effect/Multi exposure:	Classification not possible
Respiratory toxic:	Classification not possible

Ingredient

Diethyleneglycol mono butyl ether

Acute toxicity (oral):	No Classification LD50: 5080-9623 mg/kg[rat]
Acute toxicity (dermal):	No Classification LD50:> 2000 mg/kg[rat], LD50: 2764-4000 mg/kg[rabbit]
Acute toxicity (inhalation):	Classification not possible (Gas) Classification not possible (Vapour) Classification not possible (Dust/Mist) Effect on animals : Cannot be classified due to lack of data.
Skin corrosion/irritation:	No Classification Effect on person : It is reported that some persons showed erythema in a patch test with undiluted liquid in humans, but details are unknown (DFGOT vol. 7 (1996)). Effect on animals : It is reported that slight irritation was observed after application of this substance (undiluted) in rabbits or guinea pigs (PATTY (6th, 2012)), and it is written that slight irritation was found after long-term or repeated application to rabbit skin (ECETOC TR64 (2005), BUA 204 (1997)). Besides, it is decided in EU-RAR (1999) that the category of skin irritation should not be allocated because effects were not observed after repeated dermal administration (2000mg/kg) using rabbits or rats (EU-RAR (1999)). From the above results, the substance was classified as "Not classified" (Category 3 in UN GHS classification).

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Serious eye damage/irritation:	Category 2A Effect on animals : It is reported that moderate eye irritation was observed after application of 0.1 mL this substance to rabbit eyes, but resolved within 14 days (ECETOC TR 64 (1995), ACGIH (7th, 2001), PATTY (6th, 2012)). Besides, the substance is classified in "Eye Irrit. 2 H319" in EU CLP classification (ECHA CL Inventory (Access on June 2015)). From the information of moderate irritation and reversibility, it was classified in Category 2A in accordance with Guidance.
Respiratory sensitization:	Classification not possible Effect on person : Due to lack of data, the classification is not possible.
Skin sensitization:	Classification not possible Effect on animals : The classification is not possible due to lack of data. Besides, it is reported in a Maximization test using guinea pigs that sensitization was not observed (ECETOC TR. 64 (1995), BUA 204 (1997)) and that it was not sensitizing (EU-RAR (1999)). However, they were judged as insufficient data to be used for the classification due to unknown details on results and so on.
Mutagenicity:	Classification not possible Because it was not possible to classify a substance as "Not classified" according to the revised GHS classification guidance for the Japanese government, it was classified as "Classification not possible." As for in vivo, a micronucleus test in mouse bone marrow cells was negative (DFGOT vol. 7 (1996), EU-RAR (1999), ACGIH (7th, 2013), PATTY (6th, 2012)). Moreover, as for in vitro, there is a weakly positive result in a mouse lymphoma test, but other tests, namely, a bacterial reverse mutation test, and a chromosomal aberration test, a gene mutation test, and an unscheduled DNA synthesis test in cultured mammalian cells were negative. (ACGIH (7th, 2013), DFGOT vol. 7 (1996), EU-RAR (1999), PATTY (6th, 2012))
Carcinogenicity:	Classification not possible Due to no classification by other organizations, the classification is not possible due to lack of data.

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Reproductive toxicity:

Classification not possible

Percutaneous test results showed that the maternal weight was slightly reduced at 300 and 1000 mg / kg in a study in which 0, 100, 300, 1000 mg / kg was applied for 4 hours / day and a gestation period of 8 to 19 days. No outbreak or teratogenic effects were observed and the NOAEL for maternal toxicity and outbreak was 1000 mg / kg. In the day-to-day study, the NOAEL for outbreaks was 500 mg / kg due to the reduced weight gain of the offspring in the 0, 250, 500, 1000 mg / kg study over one generation, and the parental dose. And since no effect on fertility was observed, the NOAEL for parental effects and reproduction was 1000 mg / kg, but the NOAEL for 6-week exposure to male rats was 891 mg / kg in the oral repeated-dose toxicity study. It is stated that the disagreement with the NOAEL of 51 mg / kg for 13-week exposure to kg and male and female rats can be explained by the small number of parameters confirmed in the reproductive toxicity study. A recent study also found a NOAEL of 250 mg / kg in a 13-week repeated daily dose study in male and female rats. It was not possible to classify because the effect on parents was not clear in the study by daily administration.

Target organ effect/Single exposure: Classification not possible

It was not possible to classify because there was only information on the dose exceeding the guidance value. In addition, since there is no information on airway irritation and anesthetic action, it cannot be classified.

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Product Name: **BUTYL DI GLYCOL**

Target organ effect/Multi exposure:	<p>Classification not possible</p> <p>In repeated oral trials, there is a NOAEL 891 mg / kg / day in a 6-week study in male rats. In addition, there is a NOAEL dose of 51 mg / kg / day in a 13-week study in male and female rats (Hobson et al. 1987), but the medium-dose group (254 to 327 mg / kg / day) and the high-dose group (254 to 327 mg / kg / day). From 1270 to 1630 mg / kg / day), there were deaths and it was stated that the quality of the study was questionable. The former is a male-only test, and in addition to the quality problems of the latter test, the results have incomprehensible data (decrease in white blood cell count not observed in the test by Johnson et al. described later), and the information is inadequate. There was a sufficient score (only the abstract of the society, which is a low score in the Klimisch code). Subsequent studies were conducted to elucidate these issues again, with male and female rats receiving 0, 50, 250, 1000 mg / kg / day for 13 weeks (Johnson et al. 2002). The NOAEL was 250 mg / kg / day due to the effects such as a slight increase in liver specific weight observed in the 1000 mg / kg / day group. In a repeated inhalation exposure test, there was no dose-dependent effect at the highest concentration of 94 mg / m³ in the vapor exposure to rats for 6 hours / day and 90 days, and no dose-dependent effect was observed. In the repeated dose study, it was stated that there was no systemic effect at 2000 mg / kg / day in a study applied to rats for 13 weeks. In the repeated oral and transdermal administration tests, the effect was observed when the dose exceeded the guidance value, but in the repeated exposure test by inhalation, the presence or absence of the effect within the guidance value range was unknown, so it was classified as "classification not possible".</p>
Respiratory toxic:	<p>Classification not possible</p> <p>Effect on person : The classification is not possible due to lack of data. Besides, a kinematic viscosity value was calculated to be 0.069 mm²/sec (20 degrees C) from numerical data (viscosity: 0.0649 mPa*s; density (specific gravity): 0.9536) listed in HSDB (Access on June 2015).</p>

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12. Ecological information

Product

Ecotoxicity	
Acute toxicity:	No Classification
Chronic toxicity:	No Classification
Persistence and degradability :	No information.
Bioaccumulative potential :	No information.
Mobility in soil:	No information.
Hazardous to the ozone layer:	Classification not possible
Other impact :	No information.

Ingredient

Diethyleneglycol mono butyl ether

Ecotoxicity	
Acute toxicity:	No Classification
Fish:	96hrLC50: 1300 mg/L[Lepomis macrochirus]
Daphnia:	48hrEC50:> 100 mg/L[Daphnia magna]
Algae:	96hrEC50:> 100 mg/L[Scenedesmus]
Chronic toxicity:	No Classification
Fish:	No data
Daphnia:	No data
Algae:	No data
Persistence and degradability :	Readily biodegradable
Bioaccumulative potential :	No data
Hazardous to the ozone layer:	Classification not possible

13. Disposal considerations

Disposal methods:	<p>When waste materials and waste water are to be treated, collect them into specified containers and entrust the disposal to a disposal contractor having an industrial waste disposal contractor permit.</p> <p>Do not use the used containers for other purposes like filling other substances. Be sure to dispose of them after treating the content according to the above description. In case of recycling the container, return the container as it is after fitting a stopper without filling anything into it.</p>
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14. Transport information

International classification regulations	UN classification :	Not applicable
	UN number :	Not applicable
	Proper shipping name :	Not applicable
	Packing group :	Not applicable
Domestic restriction:		Transport the material in accordance with the regulations in your country or region.
Specific security precaution and condition of transportation:		Load the containers in such a way as not to wet with water, fall down, tumble, or being damaged. Cover the loaded cargo to prevent direct sunlight.
Emergency Response Guide (ERG) Numbers:	171	

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Reference	Information obtained in NITE (National Institute of Technology and Evaluation) and other literature surveys.
Disclaimer	<p>About the description: This SDS was created in accordance with JIS Z 7253 based on the materials and data available at the time of creation.</p> <p>Detailed information such as composition and ingredients corresponding to overseas legal regulation registration confirmation etc. may not be described, so please contact our sales staff separately if necessary.</p> <p>Precautions are for normal handling. In case of special handling, it is the responsibility of the user to take safety measures suitable for the intended use and usage.</p> <p>We have paid close attention to the contents, but we do not guarantee the contents.</p> <p>This product can only be used for industrial purposes. If you want to use it for other purposes, please contact us in advance.</p>