

## Safety Data Sheet

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

**Product identifier:**

Product name: Dimethyl sulfoxide

Reference number(SDS): 35535jis\_E-3

**Product type:**

Reagent

**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

### 2. Hazards identification

**GHS classification and label elements of the product****Classification of the substance or mixture****PHYSICAL AND CHEMICAL HAZARDS**

Flammable liquids: Category 4

**HEALTH HAZARDS**

Specific target organ toxicity – single exposure: Category 2(respiratory organs)

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

**Label elements**

Signal word: Warning

**HAZARD STATEMENT**

H227-Combustible liquid

H371-May cause damage to organs

**PRECAUTIONARY STATEMENT****Prevention**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash contaminated parts thoroughly after handling.

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

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

**Response**

In case of fire: Use appropriate media other than water to extinguish.

IF exposed or concerned: Call a POISON CENTER/doctor/physician.

**Storage**

Store in a well-ventilated place.

Store locked up.

**Disposal**

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

**Specific Physical and Chemical hazards**

Heating may cause fire.

### 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name: Dimethyl sulfoxide

Content (%): 99.0 <

Chemical formula: C<sub>2</sub>H<sub>6</sub>OS

Chemicals No, Japan: 2-1553

CAS No.: 67-68-5

MW: 78.13

ECNO: 200-664-3

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

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### 4. First-aid measures

Descriptions of first-aid measures

General measures

IF exposed or concerned: Call a POISON CENTER/doctor/physician.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

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.

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. Do NOT induce vomiting.

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. Headache. Drowsiness. Vomiting.

(Symptoms when skin and/or eye contact)

Dry skin. Conjunctival redness of the eyes. Blurred vision.

※May be absorbed into the skin.

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### 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, foam, dry powder, CO<sub>2</sub> 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.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Cool container with water spray.

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 full face piece operated positive pressure mode.

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## 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

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.

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## 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

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.

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 data is not available.

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.

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## 8. Exposure controls/personal protection

Control parameters

Control value in MHLW is not available.

**Adopted value**

Adopted value in JSOH is not available.

Adopted value in ACGIH is not available.

**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**

Wear respiratory protection.

**Hand protection**

Wear protective gloves. Recommended material(s): butyl rubber

Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

**Eye protection**

Wear safety glasses with side-shields.

Wear eye/face protection.

**Skin and body protection**

Wear impervious clothing and boots in case of repeated or prolonged treatment.

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**9. Physical and Chemical Properties****Information on basic physical and chemical properties**

Physical state: Liquid

Color: Colorless

Odor: Slightly characteristic odor

Odor threshold data is not available.

Melting point/Freezing point: 18.5°C

Boiling point or initial boiling point: 189°C

Boiling range data is not available.

Flammability (gases, liquids and solids): Ignitable

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 2.6 vol %

Upper explosion limit: 42.0 vol %

Flash point: (C.C.) 87°C

Auto-ignition temperature: 215°C

Decomposition temperature: >190°C

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

pH data is not available.

Dynamic viscosity: 2.14mPas(20°C)

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

Solubility in solvent: Freely soluble in ethanol, diethyl ether.

n-Octanol/water partition coefficient data is not available.

Vapor pressure: 59.4 Pa (20°C)

VOC data is not available.

Evaporation rate data is not available.

Density and/or relative density: 1.100(20/4°C)

Relative vapor density (Air=1): 2.7

Relative density of the Vapor/air - mixture at 20°C (Air = 1) data is not available.

Critical temperature data is not available.

Particle characteristics data is not available.

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## 10. Stability and Reactivity

### Reactivity

Reactivity data is not available.

### Chemical stability

Stable under normal storage/handling conditions.

Hygroscopic.

### Possibility of hazardous reactions

The vapour is heavier than air and may travel along the ground; distant ignition possible.

Decomposes on heating and on burning. This produces toxic fumes.

Reacts violently with strong oxidants such as perchlorates.

### Conditions to avoid

Contact with incompatible materials.

Open flames. Heat. Sparks.

### Incompatible materials

Strong oxidizing agents

### Hazardous decomposition products

Carbon oxides, Sulfur oxides

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## 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

##### Acute toxicity (Oral)

[GHS Cat. Japan, base data]

rat LD50=14500mg/kg (MOE risk assessment vol.13, 2015)

##### Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

rat LD50=40000mg/kg (MOE risk assessment vol.13, 2015)

##### Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

mist: rat LC50 >5330mg/m<sup>3</sup>/4hr (5.33mg/L/4hr) (SIDS, 2008)

#### Irritant properties

##### Skin corrosion/irritation

[GHS Cat. Japan, base data]

rabbit (OECD TG 404): Slight erythema, which disappeared in 3 days. (SIDS, 2008)

##### Serious eye damage/irritation

[GHS Cat. Japan, base data]

rabbit (OECD TG 405): Slight~moderate conjunctival irritation, which cleared in 3 days. (SIDS, 2008)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

#### STOT

##### STOT-single exposure

[cat.2]

[GHS Cat. Japan, base data]

respiratory system (SIDS, 2008)

STOT-repeated exposure data is not available.

Aspiration hazard data is not available.

## 12. Ecological Information

### Ecotoxicity

#### Aquatic toxicity

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

Crustacea (*Artemia salina*) EC50=6830mg/L/24hr (MOE risk assessment vol.13, 2015)

#### Water solubility

miscible (ICSC, 2000)

#### Persistence and degradability

Persistence and degradability data is not available.

#### Bioaccumulative potential

Bioaccumulative potential data is not available.

#### Mobility in soil

Mobility in soil data is not available.

#### Other adverse effects

Ozone depleting chemical data is not available.

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## 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

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

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## 14. Transport Information

### UN No., UN CLASS

UN No. or ID No.: Not applicable

UN Proper Shipping Name : Not applicable

Class or division (Transport hazard class) : Not applicable

Packing group : Not applicable

Not applicable to IMDG Code

Not applicable to IATA Dangerous Goods Regulations

#### Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

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## 15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemicals listed in TSCA Inventory

Dimethyl sulfoxide

#### 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.

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**16. Other information****GHS classification and labelling**

H227–Flam. Liq. 4: H227 Combustible liquid

H371–STOT SE 2: H371 May cause damage to organs

**Reference Book**

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39–18)

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2021 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2020 Recommendation on TLVs (JSOH)

**Supplier's data/information**Chemicals safety data management system "GHS Assistant" Version 4.11 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

([https://www.nite.go.jp/en/chem/chrip/chrip\\_search/systemTop](https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop))

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

**Definitions and Abbreviations**

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)

JSOH (Japan Society for Occupational Health)

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 2019).