# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**Creation Date** 23-Jan-2009 **Revision Date** 25-Sep-2023 **Revision Number** 13

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

| | |
|---|---|
| **Product Description:** | **Methyl sulfoxide** |
| **Cat No. :** | **127790000; 127790010; 127790025; 127790050; 127790250; 127790500; 127791000** |
| **Synonyms** | Dimethyl sulfoxide; DMSO |
| **CAS No** | 67-68-5 |
| **EC No** | 200-664-3 |
| **Molecular Formula** | C2 H6 O S |
| **REACH registration number** | 01-2119431362-50-0009 |

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Recommended Use** | Laboratory chemicals. |
| **Sector of use** | SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites |
| **Product category** | PC21 - Laboratory chemicals |
| **Process categories** | PROC15 - Use as a laboratory reagent |
| **Environmental release category** | ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates) |
| **Uses advised against** | No Information available |

### 1.3. Details of the supplier of the safety data sheet

**Company**

**EU entity/business name**
Thermo Fisher Scientific
Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium

**UK entity/business name**
Fisher Scientific UK
Bishop Meadow Road,
Loughborough, Leicestershire LE11 5RG, United Kingdom

**Swiss distributor -** Fisher Scientific AG
Neuhofstrasse 11, CH 4153 Reinach
Tel: +41 (0) 56 618 41 11
e-mail - infoch@thermofisher.com

**E-mail address** begel.sdsdesk@thermofisher.com

### 1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
**CHEMTREC** Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

customers in Switzerland:
Tox Info Suisse Emergency Number: **145 (24hr)**
Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)
Chemtrec (24h) Toll-Free: 0800 564 402
Chemtrec Local: +41-43 508 20 11 (Zurich)

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

**CLP Classification - Regulation (EC) No 1272/2008**

**Physical hazards**

Based on available data, the classification criteria are not met

**Health hazards**
Based on available data, the classification criteria are not met

**Environmental hazards**
Based on available data, the classification criteria are not met

*Full text of Hazard Statements: see section 16*

### 2.2. Label elements

Combustible liquid

### 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

DMSO readily penetrates skin and may carry other dissolved chemicals into the body
Toxic to terrestrial vertebrates
This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

| Component | CAS No | EC No | Weight % | CLP Classification - Regulation (EC) No 1272/2008 |
|---|---|---|---|---|
| Dimethyl sulfoxide | 67-68-5 | EEC No. 200-664-3 | <=100 | - |

| REACH registration number | 01-2119431362-50-0009 |
|---|---|

*Full text of Hazard Statements: see section 16*

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

**General Advice** If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

**Ingestion** Do NOT induce vomiting. Get medical attention.

**Inhalation** Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration.

**Self-Protection of the First Aider** No special precautions required.

### 4.2. Most important symptoms and effects, both acute and delayed

Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

### 4.3. Indication of any immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

**Suitable Extinguishing Media**
Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

**Extinguishing media which must not be used for safety reasons**
No information available.

### 5.2. Special hazards arising from the substance or mixture

Combustible material. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors.

**Hazardous Combustion Products**
Carbon monoxide (CO), Carbon dioxide ($CO_2$), Sulfur oxides, Sulfides, Formaldehyde.

### 5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges. Ensure adequate ventilation.

### 6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information.

### 6.3. Methods and material for containment and cleaning up

Remove all sources of ignition. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

### 7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame.

| | |
|---|---|
| **Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) (Germany)** | Storage Class/LGK 10 |
| **Switzerland - Storage of hazardous substances** | Storage class - SC 10/12<br>https://www.kvu.ch/de/themen/stoffe-und-produkte<br>https://www.kvu.ch/fr/themes/substances-et-produits<br>https://www.kvu.ch/it/temi/sostanze-e-prodotti |

### 7.3. Specific end use(s)

Use in laboratories

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

**Exposure limits**
List source(s): **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

| Component | Italy | Germany | Portugal | The Netherlands | Finland |
|---|---|---|---|---|---|
| Dimethyl sulfoxide | | TWA: 50 ppm (8 Stunden). AGW - exposure factor 2<br>TWA: 160 mg/m³ (8 Stunden). AGW - exposure factor 2<br>TWA: 50 ppm (8 Stunden). MAK | | | TWA: 50 ppm 8 tunteina Iho |

| | | | | | |
|---|---|---|---|---|---|
| | | TWA: 160 mg/m³ (8 Stunden). MAK Höhepunkt: 100 ppm Höhepunkt: 320 mg/m³ Haut | | | |

| Component | Austria | Denmark | Switzerland | Poland | Norway |
|---|---|---|---|---|---|
| Dimethyl sulfoxide | Haut MAK-TMW: 50 ppm 8 Stunden MAK-TMW: 160 mg/m³ 8 Stunden | TWA: 50 ppm 8 timer TWA: 160 mg/m³ 8 timer STEL: 100 ppm 15 minutter STEL: 320 mg/m³ 15 minutter | Haut/Peau STEL: 100 ppm 15 Minuten STEL: 320 mg/m³ 15 Minuten TWA: 50 ppm 8 Stunden TWA: 160 mg/m³ 8 Stunden | | |

| Component | Estonia | Gibraltar | Greece | Hungary | Iceland |
|---|---|---|---|---|---|
| Dimethyl sulfoxide | Nahk TWA: 50 ppm 8 tundides. TWA: 150 mg/m³ 8 tundides. STEL: 150 ppm 15 minutites. STEL: 500 mg/m³ 15 minutites. | | | | |

| Component | Latvia | Lithuania | Luxembourg | Malta | Romania |
|---|---|---|---|---|---|
| Dimethyl sulfoxide | | TWA: 50 ppm IPRD TWA: 150 mg/m³ IPRD Oda STEL: 150 ppm STEL: 500 mg/m³ | | | |

| Component | Russia | Slovak Republic | Slovenia | Sweden | Turkey |
|---|---|---|---|---|---|
| Dimethyl sulfoxide | MAC: 20 mg/m³ | | TWA: 160 mg/m³ 8 urah TWA: 50 ppm 8 urah Koža STEL: 100 ppm 15 minutah STEL: 320 mg/m³ 15 minutah | Indicative STEL: 150 ppm 15 minuter Indicative STEL: 500 mg/m³ 15 minuter TLV: 50 ppm 8 timmar. NGV TLV: 150 mg/m³ 8 timmar. NGV Hud | |

**Biological limit values**

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

**Monitoring methods**

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS70 General methods for sampling airborne gases and vapours

**Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)**

See table for values

| Component | Acute effects local | Acute effects | Chronic effects local | Chronic effects |
|---|---|---|---|---|

| | (Dermal) | systemic (Dermal) | (Dermal) | systemic (Dermal) |
|---|---|---|---|---|
| Dimethyl sulfoxide<br>67-68-5 ( <=100 ) | | | | DNEL = 200mg/kg bw/day |

| Component | Acute effects local (Inhalation) | Acute effects systemic (Inhalation) | Chronic effects local (Inhalation) | Chronic effects systemic (Inhalation) |
|---|---|---|---|---|
| Dimethyl sulfoxide<br>67-68-5 ( <=100 ) | | | DNEL = 265mg/m$^3$ | DNEL = 484mg/m$^3$ |

**Predicted No Effect Concentration (PNEC)**
See values below.

| Component | Fresh water | Fresh water sediment | Water Intermittent | Microorganisms in sewage treatment | Soil (Agriculture) |
|---|---|---|---|---|---|
| Dimethyl sulfoxide<br>67-68-5 ( <=100 ) | PNEC = 17mg/L | PNEC = 13.4mg/kg sediment dw | | PNEC = 11mg/L | PNEC = 3.02mg/kg soil dw |

| Component | Marine water | Marine water sediment | Marine water Intermittent | Food chain | Air |
|---|---|---|---|---|---|
| Dimethyl sulfoxide<br>67-68-5 ( <=100 ) | PNEC = 1.7mg/L | | | PNEC = 0.7g/kg food | |

**8.2. Exposure controls**

**Engineering Measures**
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal protective equipment**

**Eye Protection** Wear safety glasses with side shields (or goggles) (European standard - EN 166)

**Hand Protection** Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments |
|---|---|---|---|---|
| Neoprene | > 480 minutes | 0.45 mm | Level 6<br>EN 374 | As tested under EN374-3 Determination of Resistance to Permeation by Chemicals |
| Nitrile rubber | > 480 minutes | > 0.2 mm | | |

**Skin and body protection** Long sleeved clothing.

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

**Respiratory Protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**Large scale/emergency use** Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
**Recommended Filter type:** Particle filter

**Small scale/Laboratory use** Maintain adequate ventilation

**Environmental exposure controls** Prevent product from entering drains.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

| | | |
|---|---|---|
| **Physical State** | Liquid | |
| **Appearance** | Colorless | |
| **Odor** | Odorless | |
| **Odor Threshold** | No data available | |
| **Melting Point/Range** | 18.4 °C / 65.1 °F | |
| **Softening Point** | No data available | |
| **Boiling Point/Range** | 189 °C / 372.2 °F | |
| **Flammability (liquid)** | Combustible liquid | On basis of test data |
| **Flammability (solid,gas)** | Not applicable | Liquid |
| **Explosion Limits** | **Lower** 2.6 Vol%<br>**Upper** 42 Vol% | |
| **Flash Point** | 87 °C / 188.6 °F | **Method -** No information available |
| **Autoignition Temperature** | 301 °C / 573.8 °F | |
| **Decomposition Temperature** | > 190°C | |
| **pH** | No information available | |
| **Viscosity** | 1.98 mPa.s @ 25°C | |
| **Water Solubility** | Soluble | |
| **Solubility in other solvents** | No information available | |
| **Partition Coefficient (n-octanol/water)** | | |
| **Component** | **log Pow** | |
| Dimethyl sulfoxide | -1.35 | |
| **Vapor Pressure** | 0.55 mbar @ 20°C | |
| **Density / Specific Gravity** | 1.100 | |
| **Bulk Density** | Not applicable | Liquid |
| **Vapor Density** | 2.7 | (Air = 1.0) |
| **Particle characteristics** | Not applicable (liquid) | |

### 9.2. Other information

| | |
|---|---|
| **Molecular Formula** | C2 H6 O S |
| **Molecular Weight** | 78.13 |
| **Explosive Properties** | explosive air/vapour mixtures possible |
| **Evaporation Rate** | No information available |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

None known, based on information available

### 10.2. Chemical stability

Hygroscopic.

### 10.3. Possibility of hazardous reactions

| | |
|---|---|
| **Hazardous Polymerization** | Hazardous polymerization does not occur. |
| **Hazardous Reactions** | Thermal decomposition can take place above 189°C / 372°F. |

### 10.4. Conditions to avoid

Incompatible products. Excess heat. Exposure to moist air or water. Keep away from open flames, hot surfaces and sources of ignition.

### 10.5. Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases. Alkali metals.

**10.6. Hazardous decomposition products**

Carbon monoxide (CO). Carbon dioxide ($CO_2$). Sulfur oxides. Sulfides. Formaldehyde.

## SECTION 11: TOXICOLOGICAL INFORMATION

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**Product Information**

**(a) acute toxicity;**

**Oral** Based on available data, the classification criteria are not met
**Dermal** Based on available data, the classification criteria are not met
**Inhalation** Based on available data, the classification criteria are not met

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Dimethyl sulfoxide | LD50 = 28300 mg/kg ( Rat ) | LD50 = 40000 mg/kg ( Rat ) | LC50 > 5.33 mg/L ( Rat ) 4 h |

**(b) skin corrosion/irritation;** Based on available data, the classification criteria are not met

**(c) serious eye damage/irritation;** Based on available data, the classification criteria are not met

**(d) respiratory or skin sensitization;**

**Respiratory** Based on available data, the classification criteria are not met
**Skin** Based on available data, the classification criteria are not met

**(e) germ cell mutagenicity;** Based on available data, the classification criteria are not met

**(f) carcinogenicity;** Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

**(g) reproductive toxicity;** Based on available data, the classification criteria are not met

**(h) STOT-single exposure;** Based on available data, the classification criteria are not met

**(i) STOT-repeated exposure;** Based on available data, the classification criteria are not met

**Target Organs** None known.

**(j) aspiration hazard;** Based on available data, the classification criteria are not met

**Symptoms / effects,both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

**11.2. Information on other hazards**

**Endocrine Disrupting Properties** Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecotoxicity effects** Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants. Do not empty into drains. .

| Component | Freshwater Fish | Water Flea | Freshwater Algae |
|---|---|---|---|
| Dimethyl sulfoxide | 40 g/L LC50 96 h<br>33-37 g/L LC50 96 h | EC50 24h 7000 mg/L | EC50 96h 12350 - 25500 mg/L |

| Component | Microtox | M-Factor |
|---|---|---|
| Dimethyl sulfoxide | = 16000 mg/L EC50 Pseudomonas putida 16 h<br>= 32 g/L EC50 Tetrahymena pyriformis 24 h<br>= 77 mg/L EC50 Photobacterium phosphoreum 5 min | |

### 12.2. Persistence and degradability

**Persistence** Persistence is unlikely.

**Degradation in sewage treatment plant** Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

### 12.3. Bioaccumulative potential

Bioaccumulation is unlikely

| Component | log Pow | Bioconcentration factor (BCF) |
|---|---|---|
| Dimethyl sulfoxide | -1.35 | No data available |

### 12.4. Mobility in soil

The product is water soluble, and may spread in water systems . Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

### 12.5. Results of PBT and vPvB assessment

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

### 12.6. Endocrine disrupting properties

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors

### 12.7. Other adverse effects

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste from Residues/Unused Products** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

**Contaminated Packaging** Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.

**European Waste Catalogue (EWC)** According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

**Other Information** Do not flush to sewer.

**Switzerland - Waste Ordinance** Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600
https://www.fedlex.admin.ch/eli/cc/2015/891/en

## SECTION 14: TRANSPORT INFORMATION

**IMDG/IMO** Not regulated

**14.1. UN number**
**14.2. UN proper shipping name**
**14.3. Transport hazard class(es)**
**14.4. Packing group**

**ADR** Not regulated

**14.1. UN number**
**14.2. UN proper shipping name**
**14.3. Transport hazard class(es)**
**14.4. Packing group**

**IATA** Not regulated

**14.1. UN number**
**14.2. UN proper shipping name**
**14.3. Transport hazard class(es)**
**14.4. Packing group**

**14.5. Environmental hazards** No hazards identified

**14.6. Special precautions for user** No special precautions required.

**14.7. Maritime transport in bulk according to IMO instruments** Not applicable, packaged goods

## SECTION 15: REGULATORY INFORMATION

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

**International Inventories**
Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

| Component | CAS No | EINECS | ELINCS | NLP | IECSC | TCSI | KECL | ENCS | ISHL |
|---|---|---|---|---|---|---|---|---|---|
| Dimethyl sulfoxide | 67-68-5 | 200-664-3 | - | - | X | X | KE-32367 | X | X |

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | DSL | NDSL | AICS | NZIoC | PICCS |
|---|---|---|---|---|---|---|---|---|
| Dimethyl sulfoxide | 67-68-5 | X | ACTIVE | X | - | X | X | X |

**Legend:** X - Listed '-' - Not Listed **KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

**Authorisation/Restrictions according to EU REACH**

| Component | CAS No | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|---|---|---|---|---|
| Dimethyl sulfoxide | 67-68-5 | - | Use restricted. See item 75. (see link for restriction details) | - |

**REACH links**
*https://echa.europa.eu/substances-restricted-under-reach*

**Seveso III Directive (2012/18/EC)**

| Component | CAS No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements |
|---|---|---|---|
| Dimethyl sulfoxide | 67-68-5 | Not applicable | Not applicable |

**Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals**
Not applicable

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**
Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

**National Regulations**

**UK** - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

**WGK Classification** See table for values

| Component | Germany - Water Classification (AwSV) | Germany - TA-Luft Class |
|---|---|---|
| Dimethyl sulfoxide | WGK1 | |

| Component | France - INRS (Tables of occupational diseases) |
|---|---|
| Dimethyl sulfoxide | Tableaux des maladies professionnelles (TMP) - RG 84 |

**Swiss Regulations**
Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).
Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

**15.2. Chemical safety assessment**

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## SECTION 16: OTHER INFORMATION

**Full text of H-Statements referred to under sections 2 and 3**

**Legend**

**CAS** - Chemical Abstracts Service
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances
**IECSC** - Chinese Inventory of Existing Chemical Substances
**KECL** - Korean Existing and Evaluated Chemical Substances
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
**ENCS** - Japanese Existing and New Chemical Substances
**AICS** - Australian Inventory of Chemical Substances
**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit
**ACGIH** - American Conference of Governmental Industrial Hygienists
**DNEL** - Derived No Effect Level
**RPE** - Respiratory Protective Equipment
**LC50** - Lethal Concentration 50%
**NOEC** - No Observed Effect Concentration
**PBT** - Persistent, Bioaccumulative, Toxic
**TWA** - Time Weighted Average
**IARC** - International Agency for Research on Cancer
Predicted No Effect Concentration (PNEC)
**LD50** - Lethal Dose 50%
**EC50** - Effective Concentration 50%
**POW** - Partition coefficient Octanol:Water
**vPvB** - very Persistent, very Bioaccumulative

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road
**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code
**OECD** - Organisation for Economic Co-operation and Development
**BCF** - Bioconcentration factor
**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association
**MARPOL** - International Convention for the Prevention of Pollution from Ships
**ATE** - Acute Toxicity Estimate
**VOC** - (volatile organic compound)

**Key literature references and sources for data**
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Training Advice**
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

| | |
|---|---|
| **Creation Date** | 23-Jan-2009 |
| **Revision Date** | 25-Sep-2023 |
| **Revision Summary** | Not applicable. |

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006. COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006** .

**For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2, Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and Preparations).**

**Disclaimer**

**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text**

# End of Safety Data Sheet