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**Material Safety Data Sheet**

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<b>Product Name</b>	<b><u>Dimethyl sulfoxide</u></b>
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**Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**1.1. Product identification:****Product Description:** Dimethyl sulfoxide**Synonyms:** Methyl sulfoxide, DMSO**CAS-No:** 67-68-5**EC-No.:** 200-664-3**Molecular Formula:** (CH<sub>3</sub>)<sub>2</sub> SO

**REACH Registration No:** A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration, or the registration is envisaged for a later registration deadline.

**1.2. Relevant identified uses of the substance or mixture and uses advised against:****Recommended Use:** Laboratory analysis, biochemical analysis, manufacture of substances**1.3. Details of the supplier of the safety data sheet:**

- **Company** **Finar Limited**  
184-186/P, Chacharwadi Vasna,  
Sarkhej-Bavla Highway,  
Ta.: Sanand, Dist.: Ahmedabad,  
Email: [info@finarchemicals.com](mailto:info@finarchemicals.com)  
Web: [www.finarchemicals.com](http://www.finarchemicals.com)
- **E-Mail Address** [safety@finarchemicals.com](mailto:safety@finarchemicals.com); [info@finarchemicals.com](mailto:info@finarchemicals.com)

**1.4. Emergency Telephone Number:**

- For Emergency contact on: +91 - 2717 - 616 717
- Registered office No: +91 - 79 – 40040085

## Material Safety Data Sheet

Product Name	<u>Dimethyl sulfoxide</u>
--------------	---------------------------

### SECTION 2: HAZARDS IDENTIFICATION

**2.1. Classification of the substance or mixture:**

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

**2.2. Label Elements:**

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

**2.3. Other Hazards:**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Rapidly absorbed through skin.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**3.1. Substances:** Dimethyl sulfoxide

**3.2. Mixtures:**

Component	CAS-No	EC-No.	Weight %
Dimethyl sulfoxide	67-68-5	200-664-3	> 95

### SECTION 4: FIRST AID MEASURES

**4.1. Description of first aid measures:**

- **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

- **If inhaled**

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

- **If Contact with skin**

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

## Material Safety Data Sheet

<b>Product Name</b>	<b><u>Dimethyl sulfoxide</u></b>
---------------------	----------------------------------

- **In case of eye contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Get medical attention.

- **If swallowed**

Do NOT induce vomiting. Get medical attention if symptoms occur.

**4.2. Most important symptoms and effects, both acute and delayed:**

Irritant effects, Headache, Nausea, Tiredness, CNS disorders

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

Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

### **SECTION 5: FIREFIGHTING MEASURES**

**5.1. Extinguishing media:**

**Suitable Extinguishing Media-** Use water, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable Extinguishing Media-** For this substance/mixture no limitations of extinguishing agents are given.

**5.2. Special hazards arising from the substance or mixture:**

Not Combustible.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

Fire may cause evolution of: Sulphur oxides

**5.3. Advice for firefighters:**

Special protective equipment for firefighters:

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further Information:**

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### **SECTION 6: ACCIDENTAL RELEASE MEASURES**

## Material Safety Data Sheet

<b>Product Name</b>	<b><u>Dimethyl sulfoxide</u></b>
---------------------	----------------------------------

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

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### 6.2. Environmental precautions:

Do not let product enter drains.

### 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:

For disposal see Sections 13.

## **SECTION 7: HANDLING AND STORAGE**

### 7.1. Precautions for safe handling:

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

Avoid ingestion and inhalation.

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

Keep containers tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Store under inert gas.

### 7.3. Specific end use(s):

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

### 8.1. Control parameters:

**Components with workplace control parameters**

### 8.2. Exposure Controls:

**Appropriate Engineering Controls:**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See section 7.1.

## Material Safety Data Sheet

<b>Product Name</b>	<b><u>Dimethyl sulfoxide</u></b>
---------------------	----------------------------------

### **Personal Protective Equipment:**

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

### **Eye & Face Protection:**

Safety glasses

**Hand Protection:** Wear appropriate hand gloves.

### **Other protective equipment:**

Flame retardant antistatic protective clothing.

### **Respiratory Protection:**

Required when vapours/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

### **Environmental Exposure Controls:**

Do not let product enter drains.

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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

- **Appearance:** Colorless
- **Physical State:** Liquid
- **Odor:** Odorless
- **Odor Threshold:** No data available
- **pH:** No data available
- **Melting Point:** 18.4 °C
- **Critical Temperature:** No data available
- **Vapor Pressure:** 0.55 mbar at 20°C
- **Relative Density:** 1.1 g/mL
- **Vapour Density:** 2.7
- **Auto-Ignition Temperature:** 301 °C
- **Decomposition Temperature:** > 190 °C

## Material Safety Data Sheet

<b>Product Name</b>	<b><u>Dimethyl sulfoxide</u></b>
---------------------	----------------------------------

- **Volatility:** No data available
- **Bulk Density:** No data available
- **Viscosity:** 1.98 mPa.s at 25°C
- **Water/Oil Dist. Co eff.:** No data available
- **Partition Co-efficient: n-octanol/Water:** log Pow: -1.35 at 20 °C
- **Ionicity (in Water):** No data available
- **Lower Explosion Limit:** 2.6 (V)
- **Upper Explosion Limit:** 42 % (V)
- **Boiling Point/Range:** 189 °C
- **Specific Gravity:** 1.100
- **Flash Point:** 87 °C
- **Solubility:** Soluble in water

### 9.2. Other information:

**Molecular Formula:** (CH<sub>3</sub>)<sub>2</sub> SO

**Molecular Weight:** 78.13 g/mol

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity:

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

### 10.2. Chemical stability:

The product is chemically stable under standard ambient conditions (room temperature).

### 10.3. Possibility of hazardous reactions:

Risk of explosion with: acetylidene, organic halides, perchlorates, Acid chlorides, nonmetallic halides, iron(III) compounds, nitrates, fluorides, chlorates, hydrides, perchloric acid, Oxides of phosphorus, Nitric acid, silver compounds, silicon compounds, silanes, acid halides

Exothermic reaction with: boron compounds, oxyhalogenic compounds, Potassium, sodium, Strong oxidizing agents, phosphorus halides, strong reducing agents, Acid chlorides, Strong acids, silver salt, nitrogen dioxide

Risk of ignition or formation of inflammable gases or vapours with: potassium permanganate

### 10.4. Conditions to avoid:

## Material Safety Data Sheet

<b>Product Name</b>	<b><u>Dimethyl sulfoxide</u></b>
---------------------	----------------------------------

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<sub>2</sub>), Sulfur oxides, Sulfides, Formaldehyde

In the event of fire: see section 5

## **SECTION 11: TOXICOLOGICAL INFORMATION**

### 11.1 Information on toxicological effects

#### **Acute Oral toxicity**

LD50 Rat: 28,300 mg/kg

OECD Test Guideline 401

#### **Acute inhalation toxicity**

LC0 Rat: > 5.33 mg/l; 4 h ; dust/mist

OECD Test Guideline 403

#### **Acute dermal toxicity**

LD50 Rat: 40,000 mg/kg

(RTECS)

#### **Skin irritation**

Rabbit

Result: slight irritation

OECD Test Guideline 404

Possible damages: slight irritation

#### **Eye irritation**

Rabbit

Result: slight irritation

OECD Test Guideline 405

Possible damages: slight irritation

#### **Sensitisation**

Maximisation Test Guinea pig

**Material Safety Data Sheet**

<b>Product Name</b>	<b><u>Dimethyl sulfoxide</u></b>
---------------------	----------------------------------

Result: negative

Method: OECD Test Guideline 406

In animal experiments: Mouse

Result: negative

Method: OECD Test Guideline 429

**Germ cell mutagenicity**

Genotoxicity in vivo

Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)

Rat

male and female

Result: negative

Method: OECD Test Guideline 474

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

Mutagenicity (mammal cell test):

Chinese hamster ovary cells

Result: negative

Method: OECD Test Guideline 479

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

Method: OECD Test Guideline 473

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**

No data available

**Teratogenicity**

No data available

**Specific target organ toxicity - single exposure**

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**Material Safety Data Sheet**

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<b>Product Name</b>	<b><u>Dimethyl sulfoxide</u></b>
---------------------	----------------------------------

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Further Information:**

Possible symptoms:

After uptake: CNS disorders, Nausea, Tiredness, Headache

Damage to: Liver, Kidney

However, when the product is handled appropriately, hazardous effects are unlikely to occur.

Handle in accordance with good industrial hygiene and safety practice.

## **SECTION 12: ECOLOGICAL INFORMATION**

**12.1. Toxicity:****Toxicity to fish**

Static test LC50 Danio rerio (zebra fish): > 25,000 mg/l; 96 h

OECD Test Guideline 203

**Toxicity to daphnia and other aquatic invertebrates**

Static test EC50 Daphnia magna (Water flea): 24,600 mg/l; 48 h

Analytical monitoring: yes

OECD Test Guideline 202

**Toxicity to algae**

Static test EC50 Pseudokirchneriella subcapitata (green algae): 17,000 mg/l; 72 h

Analytical monitoring: yes

OECD Test Guideline 201

**Toxicity to bacteria**

EC10 Pseudomonas putida: 7,100 mg/l; 16 h (IUCLID)

EC50 activated sludge: 10 - 100 mg/l; 30 min (IUCLID)

**12.2 Persistence and degradability:**

Biodegradability

31 %; 28 d; aerobic

OECD Test Guideline 301D

**Material Safety Data Sheet**

<b>Product Name</b>	<u>Dimethyl sulfoxide</u>
---------------------	---------------------------

Not readily biodegradable.

**12.3 Bioaccumulate potential:**

Partition coefficient: n-octanol/water

log Pow: -1.35

(experimental)

(Lit.) Bioaccumulation is not expected.

**12.4 Mobility in soil:**

No data available

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Other adverse effects:**

Discharge into the environment must be avoided.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods:**

Waste material must be disposed of in accordance with the national and local regulations.

Leave chemicals in original containers. No mixing with other waste.

Handle uncleaned containers like the product itself.

**SECTION 14: Transport information**

	<b>Land transport (ADR/RID)</b>	<b>Air transport (IATA)</b>	<b>Sea transport (IMDG)</b>
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## Material Safety Data Sheet

<b>Product Name</b>	<b><u>Dimethyl sulfoxide</u></b>
---------------------	----------------------------------

<b>14.1 UN number</b>	Not classified as dangerous in the meaning of transport regulations.
<b>14.2 Proper shipping name</b>	Not classified as dangerous in the meaning of transport regulations.
<b>14.3 Class</b>	Not classified as dangerous in the meaning of transport regulations.
<b>14.4 Packing group</b>	Not classified as dangerous in the meaning of transport regulations.
<b>14.5 Environmentally hazardous</b>	Not classified as dangerous in the meaning of transport regulations.
<b>14.6 Special precautions for user</b>	Not classified as dangerous in the meaning of transport regulations.

### **SECTION 15: Regulatory information**

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

National legislation; Storage class 10 - 13

**15.2 Chemical safety assessment:**

For this product a chemical safety assessment was not carried out.

### **SECTION 16: Other information**

**Training advice:**

Provide adequate information, instruction and training for operators.

**References:** Not available

**Created:** 24/12/2020

**Disclaimer:**

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Finar Limited be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Finar Limited has been advised of the possibility of such damages.