**1. Identification**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Dimethyl sulfoxide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat No.</td>
<td>D139-1; D139-RS19; NC1115865</td>
</tr>
<tr>
<td>CAS No.</td>
<td>67-68-5</td>
</tr>
<tr>
<td>Synonyms</td>
<td>Methyl sulfoxide; DMSO</td>
</tr>
<tr>
<td>Recommended Use</td>
<td>Laboratory chemicals.</td>
</tr>
<tr>
<td>Uses advised against</td>
<td>Food, drug, pesticide or biocidal product use.</td>
</tr>
</tbody>
</table>

**Details of the supplier of the safety data sheet**

**Company**
Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

**Emergency Telephone Number**
CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

**2. Hazard(s) identification**

**Classification**
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| Flammable liquids             | Category 4 |

**Label Elements**

**Signal Word**
Warning

**Hazard Statements**
Combustible liquid

**Precautionary Statements**

**Prevention**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Dimethyl sulfoxide

Fire
In case of fire: Use CO2, dry chemical, or foam for extinction

Storage
Store in a well-ventilated place. Keep cool

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
None identified

Other hazards
DMSO readily penetrates skin and may carry other dissolved chemicals into the body.

### 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>67-68-5</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

### 4. 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.

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

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

**Most important symptoms and effects**
Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

**Notes to Physician**
Treat symptomatically

### 5. Fire-fighting measures

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

**Unsuitable Extinguishing Media**
No information available

**Flash Point**
87 °C / 188.6 °F

**Method -**
No information available

**Autoignition Temperature**
301 °C / 573.8 °F

**Explosion Limits**
- Upper: 42 vol %
- Lower: 2.6 vol %

**Sensitivity to Mechanical Impact**
No information available

**Sensitivity to Static Discharge**
No information available

**Specific Hazards Arising from the Chemical**
Combustible material. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors.

**Hazardous Combustion Products**

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

**NFPA**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 *</td>
<td>2</td>
<td>1</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**6. Accidental release measures**

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

**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.

**Methods for Containment and Clean Up**
Remove all sources of ignition. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

**7. Handling and storage**

**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.

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

**8. Exposure controls / personal protection**

**Exposure Guidelines**
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**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/face Protection**
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN 166.

**Skin and body protection**
Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection**
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and chemical properties**

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Appearance</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid</td>
<td>Colorless</td>
<td>Odorless</td>
</tr>
</tbody>
</table>
**10. Stability and reactivity**

**Reactive Hazard**
None known, based on information available

**Stability**
Hygroscopic.

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

**Incompatible Materials**
Strong oxidizing agents, Strong acids, Strong bases, Alkali metals

**Hazardous Decomposition Products**
Carbon monoxide (CO), Carbon dioxide (CO₂), Sulfur oxides, Sulfides, Formaldehyde

**Hazardous Polymerization**
Hazardous polymerization does not occur.

**Hazardous Reactions**
Thermal decomposition can take place above 189°C / 372°F.

**11. Toxicological information**

**Acute Toxicity**

**Product Information**

**Component Information**

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>LD50 = 28300 mg/kg ( Rat )</td>
<td>LD50 = 40000 mg/kg ( Rat )</td>
<td>LC50 &gt; 5.33 mg/L ( Rat ) 4 h</td>
</tr>
</tbody>
</table>

**Toxicologically Synergistic Products**
No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation**
No information available

**Sensitization**
No information available

**Carcinogenicity**
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>67-68-5</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**Mutagenic Effects**
No information available
Dimethyl sulfoxide

Reproductive Effects
No information available.

Developmental Effects
No information available.

Teratogenicity
No information available.

STOT - single exposure
None known

STOT - repeated exposure
None known

Aspiration hazard
No information available

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

Endocrine Disruptor Information
No information available

Other Adverse Effects
The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
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.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>EC50 96h 12350 - 25500 mg/L</td>
<td>40 g/L LC50 96 h 33-37 g/L LC50 96 h</td>
<td>= 16000 mg/L EC50 Pseudomonas putida 16 h = 32 g/L EC50 Tetrahymena pyriformis 24 h = 77 mg/L EC50 Photobacterium phosphoreum 5 min</td>
<td>EC50 24h 7000 mg/L</td>
</tr>
</tbody>
</table>

Persistence and Degradability
Persistence is unlikely

Bioaccumulation/ Accumulation
No information available.

Mobility
Will likely be mobile in the environment due to its water solubility.

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>-2.03</td>
</tr>
</tbody>
</table>

13. Disposal considerations

Waste Disposal Methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT
COMBUSTIBLE LIQUID, NOT REGULATED FOR TRANSPORT IN THIS QUANTITY
According to 49 CRF §173.150(f)(1), this material should reclassified as NA1993, Combustible Liquid, NOS if it is shipped in bulk.

UN-No
NA1993

Proper Shipping Name
Combustible liquid, n.o.s.

Packing Group
III

TDG
Not regulated

IATA
Not regulated

IMDG/IMO
Not regulated

15. Regulatory information

United States of America Inventory
Dimethyl sulfoxide

Component | CAS No | TSCA | TSCA Inventory notification - Active/Inactive | TSCA - EPA Regulatory Flags
--- | --- | --- | --- | ---
Dimethyl sulfoxide | 67-68-5 | X | ACTIVE | |

Legend:
TSCA - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA 12(b) - Notices of Export | Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>PICCS</th>
<th>ENCS</th>
<th>ISHL</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>67-68-5</td>
<td>X</td>
<td>-</td>
<td>200-664-3</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-32367</td>
</tr>
</tbody>
</table>

U.S. Federal Regulations

SARA 313 | Not applicable
SARA 311/312 Hazard Categories | See section 2 for more information
CWA (Clean Water Act) | Not applicable
Clean Air Act | Not applicable
OSHA - Occupational Safety and Health Administration | Not applicable
CERCLA | Not applicable
California Proposition 65 | This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant | N
DOT Severe Marine Pollutant | N

U.S. Department of Homeland Security | This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade | Slight risk, Grade 1

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com
Dimethyl sulfoxide

Creation Date 23-Jan-2009
Revision Date 23-Jul-2021
Print Date 23-Jul-2021
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

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 SDS