


SAFETY DATA SHEET

DIMETHYL SULFOXIDE

SECTION 1: Identification of the substance/mixture and of the company/undertaking Trade name:

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| 1.1 Product identifier: | |
| CAS Number: | 67-68-5 |
| EC number: | 200-664-3 |
| 1.2 SYNONYMS: | <ul style="list-style-type: none"> • Methyl sulfoxide • DMSO • Dimethyl oxide of sulphur • Sulfinylbismethane |

SECTION 2: Hazards identification:

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| 2.1 Classification of the substance or mixture: | Classification according to Regulation (EC) No 1272/2008 The substance is not classified according to the CLP regulation. |
| 2.2 Label elements: | Labelling according to Regulation (EC) No 1272/2008 |
| Hazard Pictograms: |  |
| Signal Word: | Warning |
| Hazard statements: | <p>H302: Harmful if swallowed.</p> <p>H312: Harmful in contact with skin.</p> <p>H332: Harmful if inhaled.</p> <p>H315: Causes skin irritation.</p> <p>H319: Causes serious eye irritation.</p> <p>H335: May cause respiratory irritation.</p> |
| Precautionary Statements: | <p>P261: Avoid breathing dust/fume/gas/mist/vapors/spray.</p> <p>P280: Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P302 + P352: IF ON SKIN: Wash with plenty of soap and water.</p> <p>P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> |

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| | P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| 2.3 Other hazards: | |
| Inhalation: | may cause respiratory irritation, dizziness, headache, or nausea. |
| Ingestion: | may cause gastrointestinal irritation, nausea, vomiting, and diarrhea. |
| Skin Contact: | may cause irritation, redness and discomfort in large quantities |
| Eye contact: | may cause irritation, leading to redness, pain, and watering of the eyes. |
| Chronic Exposure: | may lead to skin irritation, potential damage to the liver and kidneys, |
| Aggravation of pre-existing conditions: | may aggravate pre-existing skin conditions, such as eczema or dermatitis and respiratory disorders and organ damage. |

SECTION 3: Composition/information on ingredients

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| 3.1 Chemical characterisation: | Substances |
| CAS No: | Description: 67-68-5 DIMETHYL SULFOXIDE |
| Identification number(s): | EC number: 200-664-3 |

SECTION 4: First aid measures

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| 4.1 Description of first aid measures | Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear. |
| General information: | |
| After inhalation: | |

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| After skin contact: | Remove contaminated clothes, rinse skin with plenty of water. Consult a physician. |
| After eye contact: | Immediately flush eyes with plenty of water for at least 15 minutes, Holding eyelids during flushing. Consult a physician. |
| After swallowing: | Rinse mouth with water. Immediately after ingestion. Give lots of water to drink. Do not induce vomiting. Consult a physician. |
| 4.2 Most important symptoms and effects, both acute and delayed: | Acute symptoms may include skin irritation, respiratory distress, nausea, and eye irritation, while delayed effects could involve liver and kidney damage, nervous system disturbances, or chronic skin sensitization, particularly with prolonged or high-level exposure. |
| 4.3 Indication of any immediate medical attention and special treatment needed: | Persons with pre-existing skin, eye or respiratory disease may be at increased risk. Treat symptomatically. |

SECTION 5: Firefighting measures

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| 5.1 Extinguishing media: | Carbon dioxide. Water spray. Alcohol-resistant foam. Dry chemical or foam. |
| 5.2 Special hazards arising from the substance or mixture: | Combustible. Vapours heavier than air. Forms explosive mixtures with air on intense heating. |
| 5.3 Advice for firefighters: | Do not stay in dangerous zone without self-contained breathing apparatus. Wear fully protective suit, safety glasses and respiratory device . Cool tanks/drums with water spray/remove them into safety. |
| 5.4 further information: | No data available |

SECTION 6: Accidental release measures

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| 6.1 Personal precautions, protective equipment and emergency procedures: | Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Avoid dust accumulation. Do not touch spilled material. Seek medical attention. |
| 6.2 Environmental precautions: | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. |
| 6.3 Methods and material for containment and cleaning up: | Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite, powdered limestone. Scoop absorbed substance into closing containers. Spill must not return in its original container. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after Handling. |

SECTION 7: Handling and storage

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| 7.1 Precautions for safe handling: | Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. |
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| 7.2 Conditions for safe storage, including any incompatibilities: | <p>Store in original containers.</p> <p>Keep containers securely sealed</p> <p>Store in a cool, dry, well-ventilated area.</p> <p>Store away from incompatible materials and foodstuff containers.</p> <p>Protect containers against physical damage and check regularly for leaks.</p> <p>Store in a dry and dark area. .</p> <p>Provide for a tub to collect spills.</p> |
| Requirements to be met by storerooms and receptacles: | <p>Keep container tightly closed in a dry and well-ventilated place.</p> <p>Containers which are opened must be carefully resealed and kept upright to prevent leakage.</p> |
| 7.3 Specific end uses: | no data available |

SECTION 8: Exposure controls/personal protection

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| 8.1 Control parameters | |
| Additional information about design of technical facilities: | A system of local and general exhaust is recommended. |
| 8.2 Exposure controls | |
| Appropriate engineering controls | Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. |
| Personal protective equipment: | Dust respirator, protective masks, wearing anti chemical gloves, rubber gloves, etc. |
| General protective and hygienic measures: | Eyes, body and hand protection, maintain indoor air unobstructed. Wear protective equipment. |
| | Respiratory protection: Required. |
| Protection of hands: | Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. |

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| | Dispose of contaminated gloves after use in accordance with applicable laws. Wash and dry hands. |
| | Eye protection: Required |
| Protection of Body: | Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. |

SECTION 9: Physical and chemical properties

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| 9.1 Information on basic physical and chemical properties | |
| General Information | |
| Appearance: Form: | liquid |
| Colour: | colorless |
| Odour: | No data available |
| pH-value: | 6.5 |
| Melting point/Melting range: | 18°C |
| Boiling point/Boiling range: | 189°C |
| Flammability (solid, gaseous): | 300°C |
| Ignition temperature: | No data available |
| Decomposition temperature: | No data available |
| Self-igniting: | Not applicable |
| Flash point: | 89°C |
| Danger of explosion: | No data available |
| Explosion limits: Lower: | 3.0% |
| Explosion limits: Upper: | 42% |
| Vapour pressure: | 0.46 mmHg at 20°C |
| Density at 20 °C: | 1.542 |
| Relative density: | 1.1 |
| Vapour density: | 2.7 |
| Evaporation rate: | No data available |
| Solubility in / Miscibility with- -water at 20 °C: | Completely soluble |
| Partition coefficient:(n- octanol/water) | -2.03 |
| Viscosity: | 2.0 mPas |
| 9.2 Other information: | Sensitivity to Static Discharge |

SECTION 10: Stability and reactivity

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| 10.1 Reactivity | Reacts violently with strong oxidants such as perchlorates. Hygroscopic. Keep container tightly closed. |
| 10.2 Chemical stability | This chemical is stable under storage conditions. |
| 10.3 Possibility of hazardous reactions | Prolonged heating above 150 °C can cause rapid, exothermic decomposition. The substance decomposes on heating or on burning producing toxic fumes including sulfur oxides. |
| 10.4 Conditions to avoid | Incompatible materials, exposure to moist air or water, strong heating. |
| 10.5 Incompatible materials | Organic and inorganic acid chlorides, strong oxidizing agents, alkali metals, hydrobromic acid, acidic solutions of alkali bromides. |
| 10.6 Hazardous decomposition products | Sulfur dioxide, formaldehyde, methyl mercaptan, dimethyl sulfide, dimethyl disulfide, and bis (methylthio) methane. |

SECTION 11: Toxicological information

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| 11.1 Information on toxicological effects | |
| Acute Toxicity: | LD50 (Oral, Rat) : 14500 mg/kg LD50 (Dermal, Rat) : 40000 mg/kg LC50 (Inhalation Rat) : no data available |
| Skin corrosion/Irritation: | Skin irritation (human): Mild. Repeated skin application (human): Slight irritation. |
| Serious eye damage/irritation: | Eye irritation (rabbit): slight irritation |
| Respiratory damage/irritation: | No data available |
| Ingestion: | No data available |
| Germ cell mutagenicity: | No data available |
| Carcinogenicity: | No data available |
| Reproductive toxicity: | No data available |

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| Specific target organ toxicity - single exposure: | The substance can be absorbed into the body by inhalation, through the skin and by ingestion. |
| Specific target organ toxicity - repeated exposure: | Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the liver and blood, resulting in impaired functions and lesions of blood cells. |
| Aspiration hazard: | No data available |
| Signs and Symptoms of Exposure: | Refer section 2.3 |
| 11.2 Additional toxicological information | |
| Biodegradability: | Biodegradable in aerobic environments. |

SECTION 12: Ecological information

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| 12.1 Toxicity Aquatic toxicity: | LC50 Acute fish toxicity (Oncorhynchus mykiss): 33000 - 37000 mg/l (96hr) EC50 acute bacteria toxicity(Activated sludge): 10-100 mg/l (30min) |
| 12.2 Persistence and degradability: | Not biodegradable in water. |
| 12.3 Bioaccumulative potential: | No bioaccumulative potential |
| 12.4 Mobility in soil: | High mobility in soil. |
| 12.5 Other adverse effects: | No data available |

SECTION 13: Disposal considerations

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| 13.1 Waste treatment methods | |
| Uncleaned packaging Recommendation: | dispose of in accordance with local hazardous waste regulations |
| Recommended cleansing agents: | Mild Soap and Water, Acetone, Isopropyl alcohol, Commercial degreasers. |

SECTION 14: Transport information

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| 14.1 UN-Number · ADR, ADN, IMDG, IATA: | Not applicable |
| 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA: | Not applicable |
| 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA : | Not applicable |
| 14.4 Packing group · ADR, IMDG, IATA: | Not applicable |
| 14.5 Environmental hazards: | No data available |
| 14.6 Special precautions for user: | Handle responsibly. |

SECTION 15: Regulatory information

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| 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU | Directive 2012/18/EU, under that this substance is not classified in listed substance. |
| Named dangerous substances: | This substance is not listed in the annex 1 to the directive. |
| 15.2 Chemical safety assessment: | Chemical assessment has been carried out under REACH regulation. |

SECTION 16: Other information

The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.