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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Product	Dimethyl Sulfoxide (DMSO) ACS Reagent 99.9% Min	**Revision date**	2026-11-16
Version	1.0	**Brand**	Richest

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

Product name	Dimethyl Sulfoxide (DMSO) ACS Reagent 99.9% Min
Synonyms	Methyl sulfoxide; Methanesulfinylmethane; Methylsulfinylmethane; Dimethyl sulphoxide; DMSO
CAS No.	67-68-5
EC No.	200-664-3
Molecular formula	C2H6OS
Molecular weight	78.13 g/mol
Relevant identified uses	Polar aprotic solvent for organic synthesis; Laboratory reagent and analytical sample preparation; Solvent for polymer and specialty-chemical research; Reaction medium for pharmaceutical and agrochemical intermediate R&D, excluding clinical or food use
Uses advised against	No specific uses advised against were identified in the reviewed sources.
Company	Richest Group
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Telephone	0086 21 5017 5386
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Website	www.richest-group.com
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SECTION 2: Hazards identification

GHS Classification	Flammable liquids, Category 4; combustible liquid under US OSHA HazCom 2024 (Thermo Fisher SDS, revision 19 December 2025)
Pictogram(s)	Pending
Signal word	Warning
Hazard statement(s)	H227 Combustible liquid
Precautionary statement(s)	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources; no smoking; P370+P378 In case of fire: Use CO2, dry chemical or foam to extinguish; P403+P235 Store in a well-ventilated place; keep cool; P501 Dispose of contents/container to an approved waste disposal plant
Other hazards	A skin and eye irritant; May cause CNS depression after inhalation, ingestion, or skin absorption of high doses; Long term use may cause adverse effects to the liver and blood; [ICSC] Rats experienced no significant effects after inhalation of 200 mg/m3 (62.8 ppm) for 30 days. After skin absorption, humans may experience garlic odor on the breath, headache, nausea, and dizziness.

SECTION 3: Composition/information on ingredients	
Component	Dimethyl Sulfoxide (DMSO) ACS Reagent 99.9% Min
CAS No.	67-68-5
EC No.	200-664-3
Classification	Flammable liquids, Category 4; combustible liquid under US OSHA HazCom 2024 (Thermo Fisher SDS, revision 19 December 2025)
Concentration	≥99.9%

SECTION 4: First-aid measures	
If inhaled	Inhalation: move to fresh air and give artificial respiration if necessary.
In case of skin contact	Skin: wash with plenty of water for at least 15 minutes and obtain medical attention if symptoms occur.
In case of eye contact	Eyes: rinse immediately with plenty of water, including under the eyelids, for at least 15 minutes and obtain medical attention.
If swallowed	Ingestion: do not induce vomiting and obtain medical attention.
Most important symptoms and effects	No data available
Indication of immediate medical attention	Treat symptomatically. Show this safety data sheet to medical personnel.

SECTION 5: Fire-fighting measures	
Suitable extinguishing media	Use water spray, carbon dioxide, dry chemical or alcohol-resistant foam; water mist may cool closed containers. Combustion can produce carbon monoxide, carbon dioxide, sulfur oxides, sulfides and formaldehyde. Containers may explode when heated; firefighters require SCBA and full protective equipment.
Unsuitable extinguishing media	No data available
Special hazards arising from the chemical	Combustible. Gives off irritating or toxic fumes (or gases) in a fire. Above 87 °C explosive vapour/air mixtures may be formed. Risk of fire and explosion on contact with incompatible substances. See Chemical Dangers.
Advice for firefighters	Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]:

SECTION 6: Accidental release measures	
Personal precautions and emergency procedures	Avoid contact with the material. Ensure adequate ventilation. Wear appropriate personal protective equipment.
Environmental precautions	Prevent uncontrolled release to drains, soil and watercourses.
Methods for containment and cleaning up	Use PPE, remove ignition sources, take antistatic precautions and ventilate. Do not release to the environment or flush into surface water or sanitary sewers. Soak up with inert absorbent and keep in suitable closed containers for disposal.

SECTION 7: Handling and storage	
Precautions for safe handling	Wear face/eye protection, gloves and protective clothing. Ensure ventilation, keep away from open flames, hot surfaces and ignition sources, and avoid ingestion, inhalation and contact with skin, eyes or clothing. Remember that DMSO readily penetrates skin and can carry dissolved chemicals into the body.

SECTION 7: Handling and storage

Conditions for safe storage, including incompatibilities	Keep tightly closed in a dry, cool, well-ventilated place away from heat, sparks, flames, moist air and incompatible materials. DMSO is hygroscopic and freezes near room temperature; protect it from moisture and handle any solidification without contamination.

SECTION 8: Exposure controls/personal protection

Occupational exposure limit values	160 mg/m³
Biological limit values	No biological limit values were identified in the reviewed sources.
Appropriate engineering controls	The Thermo Fisher SDS identifies no region-specific occupational exposure limit for this product. Ensure ventilation, especially in confined areas, provide eyewash and safety showers, use chemical goggles, gloves and protective clothing, and use an approved respirator if irritation or an exposure assessment requires it.
Eye/face protection	Butyl rubber gloves, safety goggles. Respiratory filter if airborne sprays or drops are present. (USCG, 1999)
Skin and body protection	Butyl rubber gloves, safety goggles. Respiratory filter if airborne sprays or drops are present. (USCG, 1999)
Respiratory protection	Use suitable respiratory protection if exposure limits may be exceeded or dust, mist or vapour is generated.
Thermal hazards	No specific thermal hazards were identified in the reviewed sources; see Sections 5 and 10.

SECTION 9: Physical and chemical properties

Physical state	Colorless transparent liquid
Colour	Colorless liquid
Odour	Slightly sulfurous odor
Melting point / freezing point	18.4°C (TDS); SDS 18°C
Boiling point / boiling range	189°C at 760 mmHg
Flammability	Combustible. Gives off irritating or toxic fumes (or gases) in a fire. Above 87 °C explosive vapour/air mixtures may be formed. Risk of fire and explosion on contact with incompatible substances. See Chemical Dangers.
Explosion / flammability limits	LEL: 2.6 % (NTP, 1992); UEL: 63 % (NTP, 1992)
Flash point	89°C closed cup; 95°C open cup
Auto-ignition temperature	300–302°C
Decomposition temperature	No data available
pH	8.5 (50/50 in water)
Viscosity	2.24 cps at 20°C
Solubility	Miscible
Partition coefficient n-octanol/water	[-1.35]
Vapour pressure	VP: 0.42 mm at 20 °C
Density and/or relative density	1.101 g/mL at 25°C (TDS); specific gravity 1.1 at 20°C (SDS)
Relative vapour density	2.71 (NTP, 1992) - Heavier than air; will sink (Relative to Air)
Particle characteristics	Not applicable (liquid).

SECTION 9: Physical and chemical properties

Appearance	Colorless, odorless liquid
Autoignition temperature	301 °C
Decomposition information	>190 °C; thermal decomposition can occur above 189 °C
Refractive index	1.4770–1.4800
Water solubility	Soluble/miscible
Vapor pressure	0.55 mbar at 20 °C
Vapor density	2.7 (air = 1)
Flammable limits	2.6–42 vol%
Appearance / odour	Colorless liquid; odorless
Refractive index	Index of refraction: 1.4783 at 20 °C/D

SECTION 10: Stability and reactivity

Reactivity	Denser than water and miscible in water.
Chemical stability	Hygroscopic. Avoid excess heat, moist air/water, open flames and incompatible products including strong oxidizers, strong acids, strong bases and alkali metals. Hazardous polymerization does not occur; thermal decomposition can occur above 189 °C.
Possibility of hazardous reactions	DIMETHYL SULFOXIDE decomposes violently on contact with many acyl halides and related compounds such as acetyl chloride, benzenesulfonyl chloride, benzoyl chloride, cyanuric chloride, phosphorus trichloride, phosphorus oxychloride, and thionyl chloride [Chem. Eng. News 35(9):87 (1957)].
Conditions to avoid	NO open flames. NO contact with incompatible substances. See Chemical Dangers. Above 87 °C use a closed system and ventilation.
Incompatible materials	... can react with oxidizing materials.; Incompatible with magnesium perchlorate, metal oxosalts, perchloric acid, periodic acid, sulfur trioxide.
Hazardous decomposition products	When heated to decomposition it emits toxic fumes of /sulfur oxides/.

SECTION 11: Toxicological information

Toxicological summary	Thermo Fisher SDS reports oral LD50 28300 mg/kg (rat), dermal LD50 40000 mg/kg (rat) and 4-hour inhalation LC50 >5.33 mg/L (rat). Classification criteria for skin/eye irritation and sensitization are not met in that SDS, but DMSO is rapidly absorbed through skin and may transport dissolved substances.
Acute toxicity	LD50 Rat oral 17.9 mL/kg; LD50 Rat oral 14500 mg/kg; LD50 Rat ip 8200 mg/kg; LD50 Rat sc 12000 mg/kg
Health effects	Slight eye irritation. (USCG, 1999)

SECTION 12: Ecological information

Environmental fate	The SDS reports 96-hour algal EC50 12350–25500 mg/L, 24-hour water-flea EC50 7000 mg/L and fish LC50 values in the g/L range. Persistence is unlikely and mobility is expected because of water solubility; do not empty into drains.
Ecotoxicity	LC50; Species: Pimephales promelas (Fathead minnow); Conditions: static; Concentration: 34 g/L for 96 hr; LC50; Species: Salvelinus fontinalis (Brook trout); Conditions: static; Concentration: 54 g/L or 24 hr (95% CI: 50.9-58.3 g/L)

SECTION 12: Ecological information

Persistence degradability	AEROBIC: Dimethyl sulfoxide, present at 100 mg/L, reached 3.1% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(1). Little degradation of dimethyl sulfoxide (<20%) was noted in a screening test using an activated sludge inoculum(2). Using the OECD 301E method, 99% degradation was observed(3).
Bioaccumulative potential	A BCF of <4 was measured in fish for dimethyl sulfoxide using carp (Cyprinus carpio) which were exposed over a 6-week period(1). According to a classification scheme(2), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).
Mobility in soil	Using a structure estimation method based on molecular connectivity indices(1), the Koc of dimethyl sulfoxide can be estimated to be 2(SRC). According to a classification scheme(2), this estimated Koc value suggests that dimethyl sulfoxide is expected to have very high mobility in soil.
Other adverse effects	The rate constant for the vapor-phase reaction of dimethyl sulfoxide with photochemically-produced hydroxyl radicals has been measured as 9.0X10-11 cu cm/molecule-sec at 25 °C(1). This corresponds to an atmospheric half-life of about 4.3 hours at an atmospheric concentration of 5X10+5 hydroxyl radicals per cu cm(2).

SECTION 13: Disposal considerations

Product disposal methods	Send to an approved waste disposal plant. The waste generator must determine whether the discarded chemical is hazardous waste and consult local, regional and national requirements; do not discharge residues to drains.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal in accordance with local regulations.

SECTION 14: Transport information

UN Number (ADR/RID, IMDG, IATA)	Not regulated as dangerous goods
UN Proper Shipping Name	Not regulated as dangerous goods
Transport hazard class(es)	Not regulated as dangerous goods
Packing group	Not regulated as dangerous goods
Environmental hazards / Marine pollutant	Not a DOT marine pollutant according to the cited Thermo Fisher SDS.
Special precautions for user	TDG, IATA and IMDG/IMO: not regulated. US DOT: non-bulk quantities are not regulated under 49 CFR 173.150(f)(1); bulk shipments are NA1993, Combustible liquid, n.o.s. (DMSO), PG III. Confirm packaging and quantity before shipment.

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product	CAS 67-68-5; EC 200-664-3; US TSCA inventory Active in the Thermo Fisher SDS. The selected product is laboratory/research ACS reagent, and its SDS advises against food, drug, pesticide or biocidal product use; pharmaceutical or clinical applications require a different qualified grade.

SECTION 16: Other information

Full text of H-Statements	H227 Combustible liquid
Revision date	2026-11-16
Version	1.0

SECTION 16: Other information

References	Supplier technical documents, public SDS/COA/TDS and regulatory sources reviewed. Public data citations are listed below. Public data sources: Methyl sulfoxide, 99.9+%, ACS reagent, AC414880025 — specifications and packaging: https://www.fishersci.com/shop/products/bromelain-acros-organics-3/AC414880025 | Dimethyl sulfoxide, ACS, 99.9% min, 036480.M6: https://www.thermofisher.com/order/catalog/product/036480.M6 | Methyl sulfoxide Safety Data Sheet, revision 19 December 2025: https://www.fishersci.com/store/msds?partNumber=AC414880025&productDescription=METHYL+SULFOXIDE+FORM&vendorId=VN00032119&countryCode=US&language=en | Dimethyl sulfoxide compound record, CID 679: https://pubchem.ncbi.nlm.nih.gov/compound/679
Abbreviations	CAS: Chemical Abstracts Service; ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road; IMDG: International Maritime Dangerous Goods; IATA: International Air Transport Association; SDS: Safety Data Sheet.
Disclaimer	The information in this SDS applies to the specified product and is provided in good faith based on information available to Richest Group at the date of issue. It describes health, safety and environmental requirements and does not constitute a guarantee of product properties. Users must assess suitability and comply with applicable regulations.