SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Revision Date 12.03.2019 Version 1.4

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

1.1 Product identifier

Catalogue No.	102931
Product name	Dimethyl sulfoxide for DNA and peptide synthesis (max. 0.025% H_2O)
REACH Registration Number	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.
CAS-No.	67-68-5

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

Identified uses	Reagent for analysis, Chemical production For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).

1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	EHS Manager *+61 (3) 8727 6300 * Monday through Friday, 8:00am to 5:00pm (EST)
Regional representation	Merck Pty. Limited ABN 80 001 239 818 Ground Floor, Building 1 885 Mountain Highway Bayswater VIC 3153 Australia www.merckmillipore.com

1.4 Emergency telephone number

+61 (3) 8727 6300
After hours: CHEMCALL +64 4 917 9888
Poisons Information Centre: 13 1126

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

REGULATION (EC) No 1272/2008

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

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

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

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	$(CH_3)_2SO$	C_2H_6OS (Hill)
EC-No.	200-664-3	
Molar mass	78.13 g/mol	

Remarks	No disclosure requirement according to Regulation (EC) No. 1907/2006.

3.2 Mixture

Not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

After eye contact: rinse out with plenty of water. Remove contact lenses.

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

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

Foam, Carbon dioxide (CO2), Dry powder, Water

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
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.

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
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 materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections
Indications about waste treatment see section 13.

SECTION 7. Handling and storage
7.1 Precautions for safe handling

Advice on safe handling
Observe label precautions.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures
Change contaminated clothing. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Tightly closed.

Recommended storage temperature see product label.

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

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

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

See section 7.1.

Individual protection measures
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

full contact:

Glove material:	polychloroprene
Glove thickness:	0.65 mm
Break through time:	> 480 min

splash contact:

Glove material:	natural latex
Glove thickness:	0.6 mm
Break through time:	> 240 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 720 Camapren® (full contact), KCL 706 Lapren® (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

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 entrepeneur 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

Form	liquid
Colour	colourless
Odour	characteristic
Odour Threshold	No information available.
pH	No information available.
Melting point	18.5 °C
Boiling point/boiling range	189 °C at 1,013 hPa
Flash point	87 °C Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	1.8 %(V)
Upper explosion limit	63.0 %(V)

Vapour pressure	0.6 hPa at 20 °C
Relative vapour density	2.7
Density	1.10 g/cm3 at 20 °C
Relative density	No information available.
Water solubility	1,000 g/l at 20 °C
Partition coefficient: n-octanol/water	log Pow: -1.35 (experimental) (Lit.) Bioaccumulation is not expected.
Auto-ignition temperature	No information available.
Decomposition temperature	> 190 °C
Viscosity, dynamic	2.14 mPa.s at 20 °C
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

Ignition temperature	300 - 302 °C
Saturated vapour concentration	8.0 g/m3 at 20 °C
Viscosity, kinematic	2.14 mm2/s

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

hygroscopic

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
Strong heating.

10.5 Incompatible materials
various plastics, Metals

10.6 Hazardous decomposition products
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
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
i.p.
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

No indication of carcinogenic activity. (IUCLID)

Reproductive toxicity
This information is not available.

Teratogenicity
Did not show teratogenic effects in animal experiments.

Specific target organ toxicity - single exposure
This information is not available.

Specific target organ toxicity - repeated exposure
This information is not available.

Aspiration hazard
This information is not 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
Not readily biodegradable.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water
log Pow: -1.35
(experimental)

(Lit.) Bioaccumulation is not expected.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

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.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

SECTION 15. Regulatory information

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

National legislation

Storage class	10 - 13
Standard for the Uniform Scheduling of Medicines and Poisons - Poisons Schedule Number:	S6

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.

Labelling

Signal word
Warning

Hazard statements
H227 Combustible liquid.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

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