

Safety Data Sheet

according to UK REACH Regulation

Dimethyl Sulfoxid (DMSO)

Revision date: 23.01.2024

Product code: 16113.xxxxx

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Dimethyl Sulfoxid (DMSO)

Substance name: Dimethyl sulfoxide
REACH Registration Number: 01-2119431362-50-xxxx
CAS No: 67-68-5
EC No: 200-664-3
UFI: GDME-J1CT-600D-D0RM

1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

Use as laboratory reagent.

Uses advised against

Any non-intended use.

1.3. Details of the supplier of the safety data sheet

Company name: MORPHISTO GmbH
Street: Schumannstr. 144
Place: D-63069 Offenbach
Telephone: +49 (0) 69 / 400 3019-60
E-mail: info@morphisto.de
Contact person: Morphisto GmbH
E-mail: gefahrstoffmanagement@morphisto.de
Internet: <http://www.morphisto.de>

Telefax: +49 (0) 69 / 400 3019-64

1.4. Emergency telephone number:

Morphisto GmbH, Tel: +49(0)69 400 3019-60, Mo-Fr.: 09-16 Uhr

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GB CLP Regulation**

This substance is not classified as hazardous in accordance with GB CLP Regulation.

2.2. Label elements**Additional advice on labelling**

This preparation is non hazardous in the sense of regulation (EC) No 1272/2008 [GHS].

2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB) at levels of 0.1% or higher. Ecological information: The substance/mixture does not contain any components that are considered to be hazardous according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in amounts of 0.1 % or more have endocrine disrupting properties. Toxicological information: The substance/mixture does not contain any components that are to be classified according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine disrupting properties.

SECTION 3: Composition/information on ingredients**3.1. Substances**

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Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
67-68-5	Dimethyl sulfoxide			100 %
	200-664-3		01-2119431362-50-xxxx	

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
67-68-5	200-664-3	Dimethyl sulfoxide	100 %
	dermal: LD50 = 40000 mg/kg; oral: LD50 = 28300 mg/kg		

Further Information

This product contains no substances of very high concern (SVHC) (>0,1%) which are included in the Candidate List according to Article 59 of REACH.

SECTION 4: First aid measures
4.1. Description of first aid measures
General information

Take off contaminated clothing and wash it before reuse.

After inhalation

Provide fresh air.

After contact with skin

Wash with plenty of water. Take off contaminated clothing and wash it before reuse. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In all cases of doubt, or when symptoms persist, seek medical advice.

After ingestion

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink plenty of water. In all cases of doubt, or when symptoms persist, seek medical advice.

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

irritant.

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

Treat symptomatically.

SECTION 5: Firefighting measures
5.1. Extinguishing media
Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Combustible. Vapours can form explosive mixtures with air. Vapours are heavier than air and will spread at floor level.

5.3. Advice for firefighters

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In case of fire: Wear self-contained breathing apparatus. In case of fire may be liberated: Carbon dioxide (CO₂). Carbon monoxide (CO). Sulphur oxides.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Remove all sources of ignition.

For non-emergency personnel

Provide adequate ventilation. Consult an expert.

For emergency responders

Stop leak if safe to do so. Move undamaged containers from immediate hazard area if it can be done safely.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. No special environmental measures are necessary. Clean contaminated articles and floor according to the environmental legislation.

6.3. Methods and material for containment and cleaning up**For containment**

Cover drains.

For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Provide adequate ventilation as well as local exhaust at critical locations.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking.

Advice on general occupational hygiene

Take off contaminated clothing. Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Separate storage of work clothes.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed. Protect against: Contact with air/oxygen. Protect from moisture. Protect from sunlight.

Hints on joint storage

Do not store together with: food and feed. pharmaceuticals. Infectious substances. Radioactive substances. Explosive substances. Oxidizing substances. Oxidizing liquids. Organic peroxides. Self-reactive substances and mixtures. Pyrophoric solids. Substances which in contact with water form flammable gases. Ammonium nitrate and preparations containing ammonium nitrate.

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Further information on storage conditions

Recommended storage temperature: 15-25 °C

7.3. Specific end use(s)

Use as laboratory reagent.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
67-68-5	Dimethyl sulfoxide			
Worker DNEL, long-term		inhalation	systemic	484 mg/m ³
Worker DNEL, long-term		inhalation	local	265 mg/m ³
Worker DNEL, long-term		dermal	systemic	200 mg/kg bw/day

PNEC values

CAS No	Substance	Value
67-68-5	Dimethyl sulfoxide	
Freshwater		17 mg/l
Marine water		1,7 mg/l
Freshwater sediment		13,4 mg/kg
Micro-organisms in sewage treatment plants (STP)		11 mg/l
Soil		3,02 mg/kg

Additional advice on limit values

To date, no national critical limit values exist.

8.2. Exposure controls
Appropriate engineering controls

Technical ventilation of workplace Technical measures and the application of suitable work processes have priority over personal protection equipment. Provide washing facilities at the workplace, provide an eye shower or eyewash bottle and mark them.

Individual protection measures, such as personal protective equipment
Eye/face protection

Wear eye/face protection. Wear safety glasses; chemical goggles (if splashing is possible).

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable material: Butyl rubber. 0,3mm. Breakthrough time (maximum wearing time): >480 min.

Skin protection

Use of protective clothing. Lab apron.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Respiratory protection necessary at: generation/formation of aerosols. Type: A. Identification color: brown.

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Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	Liquid
Colour:	clear
Odour:	odourless
Melting point/freezing point:	18,5 °C
Boiling point or initial boiling point and boiling range:	189 °C
Flammability:	This material is combustible, but will not ignite readily.
Lower explosion limits:	2,6 g/m ³
Upper explosion limits:	28,5 g/m ³
Flash point:	88 °C
Auto-ignition temperature:	300-302 °C
Decomposition temperature:	not determined
pH-Value (at 20 °C):	7-8
Viscosity / kinematic: (at 20 °C)	1,945 mm ² /s
Water solubility: (at 20 °C)	easily soluble
Solubility in other solvents	not determined
Partition coefficient n-octanol/water:	-1,35
Vapour pressure: (at 20 °C)	0,556 hPa
Density (at 20 °C):	1,10 g/cm ³
Relative vapour density: (at 20 °C)	2,7
Particle characteristics:	not applicable

9.2. Other information**Information with regard to physical hazard classes**

Explosive properties

The product is not: Explosive.

Sustaining combustion:

No data available

Oxidizing properties

This material is combustible, but will not ignite readily.

Other safety characteristics

Evaporation rate:

not determined

Solid content:

not determined

SECTION 10: Stability and reactivity**10.1. Reactivity**

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

Vapours can form explosive mixtures with air. This product is hygroscopic.

10.3. Possibility of hazardous reactions

Oxidizing agents, strong. Chlorates. potassium Sodium. Nitrates Perchlorates. Chromium oxides.

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permanganates, e.g. potassium permanganate Nitric acid. Acid chlorides. Acids Phosphorus oxides.

10.4. Conditions to avoid

Keep away from heat.

10.5. Incompatible materials

Rubber. plastic.

10.6. Hazardous decomposition products

 In case of fire may be liberated: Carbon dioxide (CO₂). Carbon monoxide (CO). Sulphur oxides.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Acute toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
67-68-5	Dimethyl sulfoxide				
	oral	LD50 mg/kg	28300	Rat.	suppliers SDS.
	dermal	LD50 mg/kg	40000	Rat	suppliers SDS.

Irritation and corrosivity

Based on available data, the classification criteria are not met.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to humans.

Other information

The substance is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity

Based on available data, the classification criteria are not met.

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
67-68-5	Dimethyl sulfoxide					
	Acute fish toxicity	LC50	>25 mg/l	96 h	Pimephales promelas	suppliers SDS.
	Acute algae toxicity	ErC50	17 mg/l	72 h	algae	suppliers SDS.
	Acute crustacea toxicity	EC50 mg/l	24,6	48 h	Daphnia magna	suppliers SDS.
	Acute bacteria toxicity	EC50 ()	100 mg/l	0,5 h	activated sludge	suppliers SDS.

12.2. Persistence and degradability

Theoretical Oxygen Demand: 1,843 mg/mg

Theoretical carbon dioxide:: 1,127 mg/mg

12.3. Bioaccumulative potential
Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
67-68-5	Dimethyl sulfoxide	-1,35

BCF

CAS No	Chemical name	BCF	Species	Source
67-68-5	Dimethyl sulfoxide	3,16		

12.4. Mobility in soil

 Henry constant: 0,001 Pa m³/mol bei 21 °C (ECHA)

The adsorption coefficient normalized to organic carbon: 0,645 (ECHA)

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of UK REACH.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

There is no data available.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations
13.1. Waste treatment methods
Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation. Consult the local waste disposal expert about waste disposal. The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information
Land transport (ADR/RID)
14.1. UN number or ID number:

No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name:

No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es):

No dangerous good in sense of this transport regulation.

14.4. Packing group:

No dangerous good in sense of this transport regulation.

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Inland waterways transport (ADN)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Not restricted

14.7. Maritime transport in bulk according to IMO instruments

Not restricted

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 75

Directive 2010/75/EU on industrial emissions: 100 % (1100 g/l)

Directive 2004/42/EC on VOC in paints and varnishes: 100 % (1100 g/l)

Information according to Directive 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

National regulatory information

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

Dimethyl sulfoxide

SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 1,2,3,4,5,6,7,9,10,11,12,14,15,16.

Rev. 1,0; 01.09.2021; Initial release.

Rev. 2,0; 23.01.2024; general adjustment(s)

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Abbreviations and acronyms

CLP: Classification, labelling and Packaging
REACH: Registration, Evaluation and Authorization of Chemicals
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
UN: United Nations
CAS: Chemical Abstracts Service
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
LL50: Lethal loading, 50%
EL50: Effect loading, 50%
EC50: Effective Concentration 50%
ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
PBT: persistent, bioaccumulative, toxic
vPvB: very persistent, very bioaccumulative
ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Regulations concerning the international carriage of dangerous goods by rail
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)
IMDG: International Maritime Code for Dangerous Goods
EmS: Emergency Schedules
MFAG: Medical First Aid Guide
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
SVHC: Substance of Very High Concern
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>
VOC: Volatile Organic Compounds
EC/EEC: European Community/European Economic Community
EU: European Union
M-factor: Multiplying factor
IATA: International Air Transport Association
DGR: Dangerous Goods Regulations
ICAO: International Civil Aviation Organization
TI: Technical Instructions
VOC: volatile organic compound
For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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