Dimethyl sulfoxide

Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 01/06/2022 Version: 0.0

Doc. No: SDS-914.036/3

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

1.1. Product identifier

Product form : Substance

Substance name : Dimethyl sulfoxide

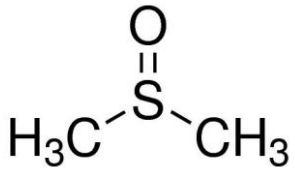
EC-No. : 200-664-3

CAS-No. : 67-68-5

Type of product : Pure substance

Formula : C_2H_6OS

Chemical structure :



Synonyms : A 10846 / deltan / demasorb / demavet / demeso / demsodrox / dermasorb / dimexide / dipirartril, tropico / DMS-70 / DMS-90 / DMSO (= dimethyl sulfoxide) / dolicur / doligur / domoso / dromisol / durasorb / gamasol 90 / hyadur / infiltrina / M 176 / methane, sulfinylbis- / methyl sulfoxide / methylsulfinylmethane / NSC-763 / rimso-5 / rimso-50 / somipront / SQ 9453 / Substances with a flash-point above 60 °C and not more than 100 °C / Substances with a flash-point above 60 °C and not more than 100 °C, which do not belong to another class / sulfinyl bis(methane) / syntexan / topsym

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Solvent
Pharmaceutical product: active ingredient
Cleansing product: component
Laboratory chemical

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

ISOLAB Laborgeräte GmbH
Am Dillhof 2 - 63863 Eschau / GERMANY
Tel: + 49 93 74 / 978 55-0
Fax: +49 93 74 / 978 55-29
prodsafe@isolab.de

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Germany	Giftnotruf der Charité CBF, Haus VIII (Wirtschaftgebäude), UG	Hindenburgdamm 30 12203 Berlin	+49 30 19240	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%
Dimethyl sulfoxide	(CAS-No.) 67-68-5 (EC-No.) 200-664-3	100

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice.

First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Rinse with water. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

First-aid measures after eye contact : Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion : Rinse mouth with water. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell.

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

Symptoms/effects after inhalation : No effects known.

Symptoms/effects after skin contact : Slight irritation. ON CONTINUOUS EXPOSURE/CONTACT: Red skin. Skin rash/inflammation. Breath has characteristic odour. Symptoms similar to those listed under ingestion.

Symptoms/effects after eye contact : Slight irritation. Redness of the eye tissue.

Symptoms/effects after ingestion : AFTER ABSORPTION OF HIGH QUANTITIES: Headache. Nausea. Vomiting. Abdominal pain. Dizziness.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Feeling of weakness. Nausea. Vomiting. Headache. Breath has characteristic odour.

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

No additional information available

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Polyvalent foam. Alcohol-resistant foam. BC powder. Carbon dioxide.

Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : DIRECT FIRE HAZARD. Material presenting a fire hazard. INDIRECT FIRE HAZARD. Temperature above flashpoint: higher fire/explosion hazard. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

5.3. Advice for firefighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray.

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Gloves. Protective clothing. See "Material-Handling" to select protective clothing.

Emergency procedures : Mark the danger area. No naked flames. Wash contaminated clothes. In case of reactivity hazard: consider evacuation.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

For containment : Contain released substance, pump into suitable containers. Plug the leak, cut off the supply.

Methods for cleaning up : For minor spillages wash down with excess of water. Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite or kieselguhr. 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.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Keep away from naked flames/heat. At temperature > flashpoint: use spark-/explosionproof appliances. Finely divided: spark- and explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

7.2. Conditions for safe storage, including any incompatibilities

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents. (strong) acids. (strong) bases. halogens. water/moisture.

Storage area : Store in a dry area. Store at ambient temperature. Keep out of direct sunlight. Ventilation at floor level. May be stored under nitrogen. Meet the legal requirements.

Special rules on packaging : SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : SUITABLE MATERIAL: No data available. MATERIAL TO AVOID: metal. plastics.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Dimethyl sulfoxide (67-68-5)		
Austria	Local name	Dimethylsulfoxid
Austria	MAK (mg/m³)	160 mg/m³
Austria	MAK (ppm)	50 ppm
Austria	Remark (AT)	H
Denmark	Local name	Dimethylsulfoxid
Denmark	Grænseværdie (langvarig) (mg/m³)	160 mg/m³
Denmark	Grænseværdie (langvarig) (ppm)	50 ppm
Estonia	Local name	Dimetüülsulfoksiid (DMSO)
Estonia	OEL TWA (mg/m³)	150 mg/m³
Estonia	OEL TWA (ppm)	50 ppm
Estonia	OEL STEL (mg/m³)	500 mg/m³
Estonia	OEL STEL (ppm)	150 ppm
Finland	Local name	Dimetyylisulfoksidi
Finland	HTP-arvo (8h) (ppm)	50 ppm
Finland	Huomautus (FI)	iho
Lithuania	Local name	Dimetilsulfoksidas
Lithuania	IPRV (mg/m³)	150 mg/m³
Lithuania	IPRV (ppm)	50 ppm
Lithuania	TPRV (mg/m³)	500 mg/m³
Lithuania	TPRV (ppm)	150 ppm

Dimethyl sulfoxide (67-68-5)		
Lithuania	Remark (LT)	O (medžiaga į organizmą gali prasiskverbti pro nepažeistą odą)
Slovenia	Local name	dimetilsulfoksid
Slovenia	OEL TWA (mg/m³)	160 mg/m³
Sweden	Local name	Dimetylsulfoxid
Sweden	nivågränsvärde (NVG) (mg/m³)	150 mg/m³
Sweden	nivågränsvärde (NVG) (ppm)	50 ppm
Sweden	kortidsvärde (KTV) (mg/m³)	500 mg/m³
Sweden	kortidsvärde (KTV) (ppm)	150 ppm
Sweden	Anmärkning (SE)	H (Ämnet kan lätt upptas genom huden Det föreskrivna gränsvärdet bedöms ge tillräckligt skydd endast under förutsättning att huden är skyddad mot exponering för ämnet ifråga); V (Vägledande korttidsgränsvärde ska användas som ett rekommenderat högsta värde som inte bör överskridas)
Russian Federation	Local name	Диметилсульфоксид
Russian Federation	OEL Ceiling (mg/m³)	20 mg/m³
Russian Federation	Remark (RU)	4 класс опасности - умеренно опасное; п + а (смесь паров и аэрозоля)
Switzerland	Local name	Dimethylsulfoxid (DMSO)
Switzerland	VME (mg/m³)	160 mg/m³
Switzerland	VME (ppm)	50 ppm
Switzerland	VLE (mg/m³)	320 mg/m³
Switzerland	VLE (ppm)	100 ppm
Switzerland	Remark (CH)	H - OAW$^{KT\ AN}$

8.2. Exposure controls

Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: butyl rubber. chloroprene rubber. neoprene. tetrafluoroethylene. latex. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: PVC. PVA. viton. nitrile rubber. natural rubber

Hand protection:

Gloves

Eye protection:

Safety glasses

Skin and body protection:

Protective clothing

Respiratory protection:

Wear gas mask with filter type A if conc. in air > exposure limit

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Liquid.
Molecular mass : 78.13 g/mol
Colour : Colourless.
Odour : Almost odourless. Garlic odour.
Odour threshold : No data available
pH : No data available
Relative evaporation rate (butylacetate=1) : No data available
Melting point : 18.5 °C

Freezing point	:	No data available
Boiling point	:	189 °C (1013 hPa)
Flash point	:	87 °C (1013 hPa)
Auto-ignition temperature	:	300 °C (1013 hPa)
Decomposition temperature	:	> 190 °C
Flammability (solid, gas)	:	No data available
Vapour pressure	:	0.6 hPa (20 °C)
Vapour pressure at 50 °C	:	7.5 hPa (50 °C)
Relative vapour density at 20 °C	:	2.7
Relative density	:	1.1 (20 °C)
Relative density of saturated gas/air mixture	:	1
Density	:	1.10 g/cm³ (20 °C)
Solubility	:	Soluble in water. Soluble in ethanol. Soluble in ether. Soluble in acetone. Soluble in chloroform. Water: 100 g/100ml (25 °C)
Log Pow	:	-1.35 (Experimental value; 20 °C)
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	0.00214 Pa.s (20 °C)
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	1.8 - 63.0 vol %

9.2. Other information

Specific conductivity	:	200000 pS/m
Saturation concentration	:	8 g/m³
VOC content	:	100 %
Other properties	:	Gas/vapour heavier than air at 20°C. Clear. Hygroscopic. Slightly volatile.

SECTION 10: Stability and reactivity

10.1. Reactivity

On burning: release of toxic and corrosive gases/vapours (sulphur oxides, carbon monoxide - carbon dioxide). Reacts violently with many compounds e.g.: with (strong) oxidizers, with (some) halogens compounds and with (some) acids: (increased) risk of fire/explosion.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Dimethyl sulfoxide (67-68-5)	
LD50 oral rat	28300 mg/kg (Rat)
LD50 dermal rat	40000 mg/kg bodyweight (Rat; Experimental value)

Skin corrosion/irritation	:	Not classified
Serious eye damage/irritation	:	Not classified
Respiratory or skin sensitisation	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified

STOT-single exposure	:	Not classified
STOT-repeated exposure	:	Not classified
Aspiration hazard	:	Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	:	Classification concerning the environment: not applicable.
Ecology - air	:	Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	:	Mild water pollutant (surface water). Not harmful to fishes (LC50(96h) >1000 mg/l). Not harmful to invertebrates (Daphnia) (EC50 > 1000 mg/l). Not harmful to algae (EC50 >1000 mg/l). Inhibition of activated sludge.

12.2. Persistence and degradability

Dimethyl sulfoxide (67-68-5)	
Persistence and degradability	Not readily biodegradable in water. Photolysis in the air.

12.3. Bioaccumulative potential

Dimethyl sulfoxide (67-68-5)	
BCF fish 1	< 0.4 (BCF)
Log Pow	-1.35 (Experimental value; 20 °C)
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

Dimethyl sulfoxide (67-68-5)	
Surface tension	0.0435 N/m (20 °C; 10 g/l)
Log Koc	Koc,SRC PCKOCWIN v1.66; 4.41; Calculated value; log Koc; SRC PCKOCWIN v1.66; 0.64; Calculated value

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations	:	Recycle by distillation. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Do not discharge into surface water.
Additional information	:	LWCA (the Netherlands): KGA category 03. Can be considered as non hazardous waste according to Directive 2008/98/EC.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

14.6. Special precautions for user

- Overland transport

Not applicable

- Transport by sea

Not applicable

- Air transport

Not applicable

- Inland waterway transport

Not applicable

- Rail transport

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Dimethyl sulfoxide is not on the REACH Candidate List

Dimethyl sulfoxide is not on the REACH Annex XIV List

VOC content : 100 %

15.1.2. National regulations

Germany

VwVwS Annex reference : Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 3; ID No. 5050)

WGK remark : Classification water polluting based on the R-phrases in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 3)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Class for fire hazard : Class III-1

Store unit : 50 liter

Classification remarks : Flammable according to the Danish Ministry of Justice; Emergency management guidelines for the storage of flammable liquids must be followed

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

SDS ISOLAB

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product