

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NATURAL DIMETHYL SULFOXIDE

Revision date: 14.04.2023

Product code: 387500

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

1.1. Product identifier

NATURAL DIMETHYL SULFOXIDE

Substance name: NATURAL DIMETHYL SULFOXIDE
CAS No: 67-68-5
EC No: 200-664-3

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

Use of the substance/mixture

Manufacturing of: - Air care products - Perfumes, fragrances - Pharmaceuticals - Cosmetics, personal care products - Flavouring Substances - Other

1.3. Details of the supplier of the safety data sheet

Company name: Axxence Aromatic GmbH
Street: Tackenweide 28
Place: D-46446 Emmerich am Rhein
Telephone: + 49 2822 68561 0
e-mail: info@axxence.com
Contact person: Andreas Goertz
e-mail: andreas.goertz@axxence.com
Internet: www.axxence.de
Responsible Department: QM - Regulatory Affairs

Telefax: + 49 2822 68561 39

Telephone: + 49 2822 68561 37

1.4. Emergency telephone number:

+49 2822 68561 99

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

This substance is not classified as hazardous in accordance with Regulation (EC) No 1272/2008.

2.2. Label elements

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: C₂ H₆ O S
Molecular weight: 78,13 g/mol

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
67-68-5	NATURAL DIMETHYL SULFOXIDE			100 %
	200-664-3			

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

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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	NATURAL DIMETHYL SULFOXIDE	100 %
		dermal: LD50 = 40000 mg/kg; oral: LD50 = 14500 mg/kg	

SECTION 4: First aid measures

4.1. Description of first aid measures

After inhalation

Provide fresh air. Remove person to fresh air and keep comfortable for breathing.

After contact with skin

Wash with plenty of water. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of soap and water.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. Rinse cautiously with water for several minutes.

After ingestion

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink 1 glass of water. IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

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

The uses are provided in Section 2.2. Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled.

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

Treat symptomatically. No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings. In case of fire, use sand, extinguishing powder or alcohol resistant foam.

5.2. Special hazards arising from the substance or mixture

Non-flammable. Vapours can form explosive mixtures with air.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. Wear a self-contained breathing apparatus and chemical protective clothing.

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. Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Do not breathe gas/vapour/aerosol. Remove all sources of ignition. Vapours are heavier than air, spread along floors and form explosive mixtures with air.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not empty into drains.

6.3. Methods and material for containment and cleaning up

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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.

Other information

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. Use approved industrial vacuum cleaner for removal. Dispose of waste according to applicable legislation.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13 Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

Advice on protection against fire and explosion

No special fire protection measures are necessary.

Advice on general occupational hygiene

Take off contaminated clothing. Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff. Take off contaminated clothing. Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Store in a dry place. Store in a closed container. Store in a well-ventilated place.

Keep container tightly closed.

Hints on joint storage

No special measures are necessary.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL/DMEL values

CAS No	Name of agent			
DNEL type		Exposure route	Effect	Value
67-68-5	NATURAL DIMETHYL SULFOXIDE			
Worker DNEL, long-term		inhalation	systemic	75 mg/m ³
Worker DNEL, long-term		inhalation	local	17,67 mg/m ³
Worker DNEL, long-term		dermal	systemic	356 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	56 mg/m ³
Consumer DNEL, long-term		inhalation	local	3,13 mg/m ³
Consumer DNEL, long-term		dermal	systemic	178 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	1,67 mg/kg bw/day

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PNEC values

CAS No	Name of agent	
Environmental compartment		Value
67-68-5	NATURAL DIMETHYL SULFOXIDE	
Freshwater		17 mg/l
Marine water		1,7 mg/l
Freshwater sediment		61,4 mg/kg
Marine sediment		6,14 mg/kg
Secondary poisoning		0,7 mg/kg
Micro-organisms in sewage treatment plants (STP)		11 mg/l
Soil		2,32 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Wash hands before breaks and after work.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear eye/face protection.

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. Tested protective gloves must be worn EN ISO 374 NBR (Nitrile rubber)

Skin protection

Use of protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Self-contained respirator (breathing apparatus)

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:	
Melting point/freezing point:	18 °C
Boiling point or initial boiling point and boiling range:	189 °C
Flammability:	not determined
Lower explosion limits:	1,8 vol. %
Upper explosion limits:	42 vol. %
Flash point:	88 °C
Auto-ignition temperature:	not determined
Decomposition temperature:	not determined
pH-Value:	No data available
Viscosity / kinematic: (at 20 °C)	1,95 mm²/s
Water solubility: (at 20 °C)	1000 g/L

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Solubility in other solvents

not determined

Partition coefficient n-octanol/water:

-1,35

Vapour pressure:

0,56 hPa

(at 20 °C)

Vapour pressure:

4,04 hPa

(at 50 °C)

Density:

1,10 g/cm³

Bulk density:

No data available

Relative vapour density:

2,69

(at 20 °C)

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

The product is not: Explosive.

Oxidizing properties

The product is not: oxidising.

Other safety characteristics

Evaporation rate:

No data available

Solvent content:

0%

Solid content:

0%

Viscosity / dynamic:

2,14 mPa·s

(at 20 °C)

Flow time:

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

The substance is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

Do not mix with acids. Acid chlorides, inorganic Phosphorus compounds Oxidising agent Reducing agent

10.6. Hazardous decomposition products

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

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

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
67-68-5	NATURAL DIMETHYL SULFOXIDE				
	oral	LD50 mg/kg	14500	Rat	Toxicology and Applied Phar., 1969
	dermal	LD50 mg/kg	40000	Rabbit	Annals o.t. NY Academy of Science, 1967

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

No information available.

Further information

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

SECTION 12: Ecological information

12.1. Toxicity

The product is not: Ecotoxic.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
67-68-5	NATURAL DIMETHYL SULFOXIDE					
	Acute fish toxicity	LC50 mg/l	>25000	96 h	Danio rerio (zebrafish)	REACH Dossier
	Acute algae toxicity	ErC50 mg/l	12000	72 h	Pseudokirchneriella subcapitata	REACH Dossier
	Acute crustacea toxicity	EC50 mg/l	24600	48 h	Daphnia magna (Big water flea)	REACH Dossier
	Acute bacteria toxicity	(EC50	10 mg/l)	0,5 h	Activated sludge	REACH Dossier

12.2. Persistence and degradability

No data available

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CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
67-68-5	NATURAL DIMETHYL SULFOXIDE			
	OECD 301D	5%	7	REACH Dossier
	Not readily biodegradable (according to OECD criteria)			
	OECD 301D	18%	21	REACH Dossier
	Not readily biodegradable (according to OECD criteria)			
	OECD 301D	31%	28	REACH Dossier
	Not readily biodegradable (according to OECD criteria)			

12.3. Bioaccumulative potential

No data available

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
67-68-5	NATURAL DIMETHYL SULFOXIDE	-1,35

BCF

CAS No	Chemical name	BCF	Species	Source
67-68-5	NATURAL DIMETHYL SULFOXIDE	4	-	REACH Registration

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

No data available

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects

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. Dispose of contents/container to industrial incineration plant. Delivery to an approved waste disposal company.

List of Wastes Code - residues/unused products

160306 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes other than those mentioned in 16 03 05

List of Wastes Code - used product

160306 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes other than those mentioned in 16 03 05

List of Wastes Code - contaminated packaging

150102 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); plastic packaging

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled.

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SECTION 14: Transport information

Land transport (ADR/RID)

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

Inland waterways transport (ADN)

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

Marine transport (IMDG)

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

Air transport (ICAO-TI/IATA-DGR)

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

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

14.7. Maritime transport in bulk according to IMO instruments

No dangerous good in sense of this transport regulation.

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

2010/75/EU (VOC):	100 % (1100 g/l)
2004/42/EC (VOC):	100 % (1100 g/l)
Information according to 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 this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s):

1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16.

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Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
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
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
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
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)
EmS: Emergency Schedules
MFAG: Medical First Aid Guide
ICAO: International Civil Aviation Organization
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
VOC: Volatile Organic Compounds
SVHC: Substance of Very High Concern
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>
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.

Identified uses

No	Short title	LCS	SU	PC	PROC	ERC	AC	TF	Specification
1		-	4	28	-	-	-	-	Flavour

LCS: Life cycle stages

PC: Product categories

ERC: Environmental release categories

TF: Technical functions

SU: Sectors of use

PROC: Process categories

AC: Article categories