NANO TECHNOLOGY
CHEMICALS

Safety Data Sheet

Dimethyl Sulfoxide (DMSO)

The pages that follow are the Safety Data Sheet as issued by the supplier/manufacturer. They are provided unchanged by Nano Technology Chemicals (NTC). Refer to Section 1 of the attached SDS for the responsible party and emergency telephone number.

Questions about this product or document:

Nano Technology Chemicals, Charlotte, NC
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Cover sheet date: October 12, 2026. For the SDS revision date, see the attached document.

In an emergency, use the emergency telephone number in Section 1 of the attached SDS.

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date: 10.02.2022 Version No: 6.02 (replaces version 6.01) Revision: 10.02.2022

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

· **1.1 Product identifier**

· **Trade name:**
Dimethyl Sulfoxide (DMSO)

Enviro S, dimethyl sulphoxide, methyl sulfoxide, sulfinylbix[methane]

· **CAS Number:**
67-68-5
· **EC number:**
200-664-3

· **Registration number:** 01-2119431362-50-0001

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

· **Application of the substance / the preparation:** Solvents

· **Uses advised against:** No further relevant information available.

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**
Gaylord Chemical Company, L.L.C.
1880 Fairlawn Rd
Tuscaloosa, AL 35401
United States
Tel: +1 (205) 561-5045
Email: ehs@gaylordchem.com

· **1.4 Emergency telephone number:**
EMERGENCY HEALTH, SAFETY & ENVIRONMENTAL INFORMATION CALL:
Gaylord Chemical Company, LLC
Tel: +1 (985) 649-5464 (8:00 am - 5:00 pm CST)
+1 (205) 342-0650 (Nights and Weekends)

EMERGENCY TRANSPORTATION INFORMATION, CALL:
CHEMTREC
DOMESTIC NORTH AMERICA: (800) 424-9300
INTERNATIONAL: +1 (703) 741-5500

OTHER INFORMATION, CALL:
Gaylord Chemical Company, LLC
Tel: +1 (985) 649-5464

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**
The substance is not classified, according to the CLP regulation.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008** Void
· **Hazard pictograms** Void
· **Signal word** Void
· **Hazard statements** Void

· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** No

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· **vPvB:** No

SECTION 3: Composition/information on ingredients

· **3.1 Substances**
· **CAS No. Description**
67-68-5 dimethyl sulfoxide
· **Identification number(s)**
· **EC number:** 200-664-3

SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:**
No special measures required.
If symptoms persist consult doctor.
· **After inhalation:** Supply fresh air.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:**
Rinse opened eye for several minutes under running water.
Remove contact lenses, if present and easy to do. Continue rinsing.
· **After swallowing:**
Rinse mouth.
Do NOT induce vomiting.
· **4.2 Most important symptoms and effects, both acute and delayed**
Coughing
Gastric or intestinal disorders
· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
CO□, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
Carbon monoxide
Carbon dioxide
Sulphur oxides (SOx)
· **5.3 Advice for firefighters**
· **Protective equipment:** Wear self-contained respiratory protective device.
· **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation.
Keep away from ignition sources.
Wear protective clothing.

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· **6.2 Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of the material collected according to regulations.
· **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
· **Information about fire and explosion protection:** Keep ignition sources away - Do not smoke.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
· **Information about storage in one common storage facility:**
Do not store together with oxidising and acidic materials.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Store receptacle in a well ventilated area.

· **7.3 Specific end use(s)** No further relevant information available.

* SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**
· **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **DNELs**		
Oral	DNEL(long/systemic)	60 mg/kg bw/day (Consumer)
Dermal	DNEL(long/systemic)	100 mg/kg bw/day (Consumer)
		200 mg/kg bw/day (Workers (Industrial/Professional))
Inhalative	DNEL(long/local)	47 mg/m3 (Consumer)
		265 mg/m3 (Workers (Industrial/Professional))
	DNEL(long/systemic)	120 mg/m3 (Consumer)
		484 mg/m3 (Workers (Industrial/Professional))

· **PNECs**	
PNEC(aqua)	17 mg/L (freshwater)
	1.7 mg/L (marine water)
PNEC(STP)	11 mg/L (sewage treatment plant)
PNEC(sediment)	13.4 mg/kg sedi. dw (freshwater)
PNEC(soil)	3.02 mg/kg soil dw (soil)
PNEC(oral)	700 mg/kg food (food)

· **8.2 Exposure controls**
· **Individual protection measures, such as personal protective equipment**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Do not eat, drink, smoke or sniff while working.

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The usual precautionary measures are to be adhered to when handling chemicals.

· **Respiratory protection:**
Not necessary if room is well-ventilated.
Use suitable respiratory protective device when high concentrations are present.
Only during spraying without adequate removal by suction.

· **Hand protection**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Butyl rubber, BR
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.75 mm

· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye/face protection**



Tightly sealed goggles

· **Body protection:** Protective work clothing

* SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**	
· **Physical state**	Fluid
· **Form:**	Fluid
· **Colour:**	Colourless Clear
· **Odour:**	Odourless
· **Odour threshold:**	Not determined.
· **Melting point/freezing point:**	18.5 °C
· **Boiling point or initial boiling point and boiling range**	189 °C
· **Flammability**	Not applicable.
· **Lower and upper explosion limit**	
· **Lower:**	2.6 Vol %
· **Upper:**	28.5 Vol %
· **Flash point:**	87 °C (ASTM D93)
· **Ignition temperature:**	300 - 302 °C
· **Decomposition temperature:**	190 °C
· **pH**	Not determined.
· **Viscosity:**	
· **Kinematic viscosity**	Not determined.
· **Dynamic at 20 °C:**	2.14 mPas
· **Solubility**	
· **water at 25 °C:**	1000 g/L (calc.)
· **Partition coefficient n-octanol/water (log value)**	-1.35 logPow (20 °C, pH 7)
· **Vapour pressure at 20 °C:**	0.56 hPa (EU Method A.4)
· **Density and/or relative density**	
· **Density at 20 °C:**	1.1 g/cm³ (EU Method A.3)
· **Relative density**	Not determined.

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· **Vapour density**	2.7 (Air = 1)
· **Relative gas density**	Not determined.
· **9.2 Other information**	
· **Explosive properties:**	Product does not present an explosion hazard.
· **Oxidising properties**	No
· **Evaporation rate**	Not determined.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability** No decomposition if used and stored according to specifications.
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
To avoid thermal decomposition do not overheat.
· **10.3 Possibility of hazardous reactions** No dangerous reactions known.
· **10.4 Conditions to avoid** Keep away from heat and direct sunlight.
· **10.5 Incompatible materials:**
Strong oxidizing agents
Perchlorates
· **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

* 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.

· **LD/LC50 values relevant for classification:**		
Oral	LD50	28300 mg/kg (Rat) (OECD Guideline 401)
Dermal	LD50	40000 mg/kg (Rat)
Inhalative	LC0	> 5.33 mg/L (Rat) (OECD Guideline 403, inhalation:vapour) 4 h

· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
· **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** 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.
· **Additional toxicological information:**
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
Ames and/or Micronucleus Test: negative
· **11.2 Information on other hazards**
· **Endocrine disrupting properties** Substance is not listed.

* SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**	
LC50 (96h) (static)	> 25000 mg/L (Fish) (OECD Guideline 203, Danio rerio) nominal
EC50 (48h) (static)	24600 mg/L (Daphnia) (OECD Guideline 202, Daphnia magna)

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EC50 (0,5h) (static)	10 - 100 mg/L (Bacteria) (ISO 8192, activated sludge)
EC50 (72h) (static)	17000 mg/L (Algae) (OECD Guideline 201,Pseudokirchneriella subcapitata) nominal

· **12.2 Persistence and degradability**
Not readily biodegradable
31 % (28 d, OECD Guideline 301D)

· **12.3 Bioaccumulative potential**
Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.
3.16 BCF (QSAR)

· **12.4 Mobility in soil** 0.64 log Koc (QSAR)

· **12.5 Results of PBT and vPvB assessment**
According to the results of its assessment, this substance is not a PBT or a vPvB.
· **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.

· **12.7 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation:** Must be specially treated adhering to official regulations.

· **Uncleaned packaging**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· **14.1 UN number or ID number**
· **ADR/RID/ADN, IMDG, IATA** Void
· **14.2 UN proper shipping name**
· **ADR/RID/ADN, IMDG, IATA** Void
· **14.3 Transport hazard class(es)**
· **ADR/RID/ADN, IMDG, IATA**
· **Class** Void
· **14.4 Packing group**
· **ADR/RID/ADN, IMDG, IATA** Void
· **14.5 Environmental hazards:**
· **Marine pollutant:** No
· **14.6 Special precautions for user** Not applicable.
· **14.7 Maritime transport in bulk according to IMO instruments** Not applicable.
· **Transport/Additional information:** Not dangerous according to the above specifications.
· **UN "Model Regulation":** Void

SECTION 15: Regulatory information

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

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** Substance is not listed.

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· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.
· **REGULATION (EU) 2019/1148**
· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**
Substance is not listed.
· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
· **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.

· **Chemical Inventories:**
Australia - AICS
Canada - DSL
EU - EINECS
China - IECSC
Japan - ENCS
New Zealand - NZIoC
Korea - ECL
USA - TSCA
Philippines - PICCS

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:**
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Herrnsheimer Hauptstrasse 1b
D-67550 Worms
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Email: sds@chemservice-group.com
· **Date of previous version:** 09.02.2022
· **Version number of previous version:** 6.01

· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
MARPOL: (from Marine Pollutant) International Convention for the Prevention of Marine Pollution from Ships
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
UN: United Nations (also UNO: United Nations Organization)
NOEC: No Observed Effect Concentration
OECD: Organisation for Economic Co-operation and Development
ASTM: American Society for Testing and Materials
WAF: Water Accommodated Fraction
ADR: Accord relatif au transport international 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 Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

· *** Data compared to the previous version altered.**