

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

Printing date: 02.03.2017

Version No: 6

Revision: 02.03.2017

**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 Chemical characterisation: 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:**
CO₂, 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 (SO_x)
 - **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 (intermittent release)
PNEC(sediment)	16.4 mg/kg sedi. dw (sediment)
PNEC(soil)	3.02 mg/kg soil dw (soil)
PNEC(oral)	7000 mg/kg food

- **8.2 Exposure controls**
- **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.

· **Protection of hands:**

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 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**

· **Appearance:**

Form:	Fluid
Colour:	Colourless
	Clear

· **Odour:** Odourless

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/freezing point: 18.5 °C

Initial boiling point and boiling range: 189 °C

· **Flash point:** 87 °C (Closed Cup)

· **Flammability (solid, gas):** Highly flammable.

· **Ignition temperature:** 215 °C

· **Decomposition temperature:** 190 °C

· **Auto-ignition temperature:** Product is not selfigniting.

· **Explosive properties:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: 2.6 Vol %

Upper: 42 Vol %

· **Oxidising properties** No

· **Vapour pressure at 20 °C:** 0.59 hPa

· **Density at 20 °C:** 1.1 g/cm³

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- **Relative density** Not determined.
- **Vapour density** 2.7 (Air = 1)
- **Evaporation rate** Not determined.
- **Solubility in / Miscibility with water at 25 °C:** 1000 g/L
Fully miscible.
- **Partition coefficient: n-octanol/water:** -1.35 logPow @ 20 °C, pH 7
- **Viscosity:**
- **Dynamic at 20 °C:** 2.14 mPas
- **Kinematic:** Not determined.

- **9.2 Other information** No further relevant information available.

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** See materials to be avoided
- **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 toxicological effects**
- **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	LC50 (4h)	> 5330 mg/L (Rat) (OECD Guideline 433, inhalation:vapour)

- **Primary irritant effect:**
- **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.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
Ames and/or Micronucleus Test: negative
- **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.

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SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

LC50 (96h) (static)	> 25000 mg/L (Fish) (Danio rerio) nominal
EC50 (48h) (static)	24600 mg/L (Daphnia) (OECD Guideline 202, Daphnia magna)
EC50 (0,5h) (static)	10 - 100 mg/L (Bacteria) (ISO 8192, activated sludge)

· **12.2 Persistence and degradability**

Not readily biodegradable
31 % @ 28d (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

· **12.5 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**

· **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 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** 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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· 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:

Chemservice GmbH
Herrnsheimer Hauptstrasse 1b
D-67550 Worms
Tel.: +49 (0)6241-95480-0
Fax: +49 (0)6241-95480-25
Email: sds@chemservice-group.com

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

· * Data compared to the previous version altered.