

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31 as
amended by UK REACH SI 2019/758

Printing date 16.04.2024

Version number 2 (replaces version 1)

Revision: 16.04.2024

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

- **1.1 Product identifier**
- **Trade name:** Di Methyl Sulphoxide (DMSO)
- **Article number:** 40-1825-105
- **CAS Number:**
67-68-5
- **EC number:**
200-664-3
- **Registration number** 01-2119431362-50-XXXX
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Product category**
PC19 Intermediate
PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
PC21 Laboratory chemicals
PC35 Washing and cleaning products (including solvent based products)
PC0 Other
- **Application of the substance / the mixture**
Laboratory chemicals
Solvents
Laboratory reagent
- **Uses advised against**
Processes involving extreme heat use advised against.
Any use carrying a risk of direct contact with eyes/skin where workers are exposed without adequate personal protective equipment (PPE).
Any use involving significant release of aerosol, vapour or dust in the breathing zone of workers where they are exposed without suitable respiratory protective equipment (RPE).
Processes involving the use of incompatible substances - refer to section 10.
The product is intended exclusively for industrial and professional use.
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Severn Biotech Ltd.
Unit 2,
Park Lane,
Kidderminster,
Worcestershire.
DY11 6TJ
UK
Tel: 0044 1562 825286
Fax: 0044 1562 825284
email: info@severnbiotech.com
- **Further information obtainable from:** Product safety department.
- **1.4 Emergency telephone number:**
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

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 GB CLP regulation.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void

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- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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:** Immediately remove any clothing soiled by the product.
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- **Information for doctor:** Treat symptomatically and supportively.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **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.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
Combustible
In case of fire, the following can be released:
Carbon monoxide (CO)
Sulphur Oxides (SO_x)
Vapours are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear fully protective suit.
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.

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· **Additional information**

- Cool endangered receptacles with water spray.
- Absorb gas/vapours 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**

- Particular danger of slipping on leaked/spilled product.
- Keep ignition sources away - no smoking.
- Ensure adequate ventilation
- Wear protective equipment. Keep unprotected persons away.

· **6.2 Environmental precautions:**

- Do not allow to penetrate the ground/soil.
- Do not allow product to reach sewage system or any water course in the undiluted form.

· **6.3 Methods and material for containment and cleaning up:**

- Contain and collect spillage with non-combustible, absorbent material e.g.sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local 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**

- Prevent formation of aerosols.
- Ensure good ventilation/exhaustion at the workplace.
- Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.
- Welding and other hot work operations in the work area must only be permitted under supervision.
- Vapour is heavier than air. Beware of accumulation in pits and confined spaces.

· **Information about fire - and explosion protection:**

- Keep ignition sources away - Do not smoke.
- Do not heat up to temperatures close to flash point.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**

- Prevent any seepage into the ground.
- Do not store in aluminium or galvanised containers.

· **Information about storage in one common storage facility:**

- Do not store together with acids.
- Store away from oxidising agents.
- Store away from foodstuffs.

· **Further information about storage conditions:**

- Minimum storage temperature: 20 °C
- Keep container tightly sealed.
- Store in a bunded area.

· **Storage class: 10**

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

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SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.

· DNELs

Oral	Long-term systemic effects	1.67 mg/kg bw/day (general population)
Dermal	Long-term systemic effects	178 mg/kg bw/day (general population) 356 mg/kg bw/day (worker)
Inhalative	Long-term systemic effects	56 mg/m ³ (general population) 75 mg/m ³ (worker)
	Long-term local effects	3.13 mg/m ³ (general population) 17.67 mg/m ³ (worker)

· PNECs

Freshwater	17 mg/L
Marine water	1.7 mg/L
Sewage Treatment Plant	11 mg/L
Sediment (freshwater)	61.4 mg/kg
Sediment (marine water)	6.14 mg/kg
Soil	2.32 mg/kg
Secondary poisoning	700 mg/kg food

- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Do not inhale gases / fumes / aerosols.
Do not eat, drink, smoke or sniff while working.
- **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Hand protection**



Protective gloves.
Use gloves tested and approved under appropriate government standards such as NIOSH (US) or EN374 (EU).

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

Nitrile rubber, NBR

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.

· 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



Safety glasses with side-shields conforming to EN166.
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

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· **Body protection:**

Impervious protective clothing

Body protection must be chosen depending on product properties, activity and possible exposure.

- **Environmental exposure controls** Do not allow to enter drains, sewers or watercourses.

SECTION 9: Physical and chemical properties

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

· Physical state	Fluid
· Colour:	Colourless
· Odour:	Odourless
· Odour threshold:	Not determined.
· Melting point/freezing point:	18.5 °C
· Boiling point or initial boiling point and boiling range	189 (decomp) °C
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	2.6 Vol %
· Upper:	28.5 Vol %
· Flash point:	95 °C
· Auto-ignition temperature:	>250 °C
· Decomposition temperature:	Not determined.
· pH	Not determined.
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic at 25 °C:	198 mPas
· Solubility	
· water:	Fully miscible.
· Partition coefficient n-octanol/water (log value)	-1.35 log POW
· Vapour pressure at 20 °C:	2.5 hPa
· Density and/or relative density	
· Density at 20 °C:	1.1 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.

· **9.2 Other information**

NOTE: The physical data presented above are typical values and should not be construed as a specification.

· **Appearance:**· **Form:**

Fluid

· **Important information on protection of health and environment, and on safety.**· **Ignition temperature:**

Not determined.

· **Explosive properties:**

Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· **Molecular weight**

78.13 g/mol

· **Change in condition**· **Evaporation rate**

Not determined.

· **Information with regard to physical hazard classes**· **Explosives**

Void

· **Flammable gases**

Void

· **Aerosols**

Void

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· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
At elevated temperatures, explosive vapour/air mixtures may be formed.
Heating will cause rise in pressure of container with risk of bursting.
- **10.3 Possibility of hazardous reactions**
Reacts with acids.
Reacts with halogenated compounds.
Reacts violently with oxidising agents.
- **10.4 Conditions to avoid** Heat and static discharge.
- **10.5 Incompatible materials:**
Strong acids.
Strong oxidising agents.
Substances specifically listed in section 10.3 as incompatible.
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Sulphur oxides (SO_x)
Hydrogen sulphide
Mercaptans
Formaldehyde

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	> 10,000 mg/kg (rat)
Dermal	LD50	> 10,000 mg/kg (rabbit)

- **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.

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- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **Subacute to chronic toxicity:** Prolonged or repeated skin contact may irritate and cause dermatitis.
- **Additional toxicological information:**
Special attention needed when toxic materials are present in dimethyl sulphoxide formulations due to enhanced skin absorption.
- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

EC50 (96 h)	14.6 mg/l (Bacteria)
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- **12.2 Persistence and degradability** Not easily biodegradable
- **12.3 Bioaccumulative potential** May be accumulated in organisms - see Section 8.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **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.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Recommended Hierarchy of Controls:

- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· European waste catalogue

Waste key numbers in accordance with the European Waste catalogue (EWC) are origin-referred defined. Since this product is used in several industries, no waste key can be provided by the supplier. The waste key number should be determined in arrangement with your waste disposal partner or the responsible authority.

· Uncleaned packaging:

· Recommendation:

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Disposal must be made according to official regulations.

Containers, even those that are "empty," may contain residues that can develop flammable and/or hazardous vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

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· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.**SECTION 14: Transport information**

· 14.1 UN number or ID number · ADR/RID/ADN, ADN, IMDG, IATA	Not applicable
· 14.2 UN proper shipping name · ADR/RID/ADN, ADN, IMDG, IATA	Not applicable
· 14.3 Transport hazard class(es) · ADR/RID/ADN, ADN, IMDG, IATA · Class	Not applicable
· 14.4 Packing group · ADR/RID/ADN, IMDG, IATA	Not applicable
· 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":	Not applicable

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Poisons Act**
- **Regulated explosives precursors** Substance is not listed.
- **Regulated poisons** Substance is not listed.
- **Reportable explosives precursors** Substance is not listed.
- **Reportable poisons** Substance is not listed.
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 75
- **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.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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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.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

· **Department issuing SDS:** Product safety department.

· **Date of previous version:** 21.07.2021

· **Version number of previous version:** 1

· **Abbreviations and acronyms:**

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 (UK REACH)

PNEC: Predicted No-Effect Concentration (UK 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.**

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