

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

Printing date 24.11.2011

Version number 1

Revision: 03.08.2011

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

- **1.1. Product identifier**
- **Trade name:** Dimethyl sulfoxide
- **Synonyma** DMSO
- **Article number:** 20385
- **CAS Number:**
67-68-5
- **EC number:**
200-664-3
- **1.2. Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation** Laboratory chemicals
- **1.3. Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de
- **Information department:** Product Safety department Tel.: +49 6221 13840-35
- **1.4. Emergency telephone number:** +49 6131 19240 (university hospital Mainz)

SERVA
Electrophoresis

2 Hazards identification

- **2.1. Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R36/38: Irritating to eyes and skin.

- **Classification system:**

The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.

- **2.2. Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

- **Hazard pictograms** GHS07

- **Signal word** Warning

- **Hazard statements**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

- **Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

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- **2.3. Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.

3 Composition/information on ingredients

- **3.1. Chemical characterization: Substances**
- **CAS No. Description:**
67-68-5 dimethyl sulfoxide
- **Identification number(s):**
- **EC number:** 200-664-3
- **Description:**
- **Empirical formula:** C₂H₆O S
- **MW:** 78,1

4 First aid measures

- **4.1. Description of first aid measures**
- **After inhalation** Supply fresh air and to be sure call for a doctor.
- **After skin contact** Immediately rinse with water.
- **After eye contact** Rinse opened eye for several minutes under running water. Then consult doctor.
- **After swallowing**
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.
- **Information for doctor**
- **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.

5 Firefighting measures

- **5.1. Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2. Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Sulphur dioxide (SO₂)
Carbon monoxide and carbon dioxide
Formaldehyde
Methyl mercaptan
- **5.3. Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **6.1. Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation
- **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).

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Send for recovery or disposal in suitable receptacles.

· **6.4. Reference to other sections**

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

* **7 Handling and storage**

· **Handling**

· **7.1. Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.

· **Information about protection against explosions and fires:**

Fumes can combine with air to form an explosive mixture.

· **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:**

Store away from oxidizing agents.

Do not store together with acids.

· **Further information about storage conditions:**

Keep receptacle tightly sealed.

This product is hygroscopic.

Store in dry conditions.

Protect from exposure to the light.

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

* **8 Exposure controls/personal protection**

· **Additional information about design of technical systems:** No further data; see item 7.

· **8.1. Control parameters**

· **Components with limit values that require monitoring at the workplace:** Not required.

· **DNELs**

workers: long term exposure-systemic effects, dermal: 400 mg/kg/Tag

Worker: Long term exposition - systemic effect, inhalation: 394 mg/m³

Population: Long term exposition - systemic effect, dermal: 200 mg/kg/Tag

Population: Long term exposition - systemic effect, inhalation: 70 mg/m³

Population: Long term exposition - systemic effect, oral: 100 mg/m³

· **PNECs**

Freshwater: 17 mg/l

Seawater: 1,7 mg/l

Sediment: 55,75 mg/l

Soil: 3,41 mg/l

Sewage plant: 11,0 mg/l

Oral (secondary poisoning): 700 mg/kg food

· **Additional information:** The lists that were valid during the creation were used as basis.

· **8.2. Exposure controls**

· **Personal protective equipment**

· **General protective and hygienic measures**

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.

· **Breathing equipment:**

Short term filter device:

Filter P2.

· **Protection of hands:**

Protective gloves.

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.

- **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.

- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

Chloroprene rubber, CR

Nitrile rubber, NBR

- **Eye protection:** Tightly sealed goggles.

- **Body protection:** Protective work clothing.

9 Physical and chemical properties

- **9.1. Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Liquid
Colour:	Colourless
Odour:	Odourless

- **pH-value (100 g/l) at 20°C:** 5.0 - 7.0

- **Change in condition**

Melting point/Melting range:	18°C
Boiling point/Boiling range:	189°C

- **Flash point:** 87°C

- **Ignition temperature:** 270°C

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

Lower:	1.8 Vol %
Upper:	Dec.

- **Vapour pressure at 20°C:** 2.5 hPa

- **Density at 20°C:** 1.104 g/cm³

- **Solubility in / Miscibility with Water at 20°C:** 1000 g/l

- **Segregation coefficient (n-octanol/water):** -1.35 log POW

- **Viscosity:**

dynamic at 20°C: 197 mPas

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

10 Stability and reactivity

- **10.1. Reactivity** No further relevant informations available

- **10.2. Chemical stability**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

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- **10.3. Possibility of hazardous reactions**
No further relevant informations available.
Reacts with Bromomethane and sodium hydride
- **10.4. Conditions to avoid**
Heating
exposure to the light
Avoid contact with: water (the product disproportionates to dimethyl sulfide and dimethyl sulfone)
- **10.5. Incompatible materials:**
Avoid contact with: acids, strong oxidizers
Avoid contact with: Halides of organic and inorganic acids
Avoid contact with: Methyl bromide, sodium hydride
Avoid contact with: Zinc and steel (in the presence of water)
Avoid contact with: Sulphur, phosphor
- **10.6. Hazardous decomposition products:**
Sulphur oxides (SO_x)
methyl mercaptan
formaldehyde
Dimethyl sulphide, dimethylsulfone

11 Toxicological information

- **11.1. Information on toxicological effects**
 - **Acute toxicity:**
- | · LD/LC50 values that are relevant for classification: | | |
|--|----------|-------------------------|
| Oral | LD50 | 14500 mg/kg (rat) |
| Dermal | LD50 | 40 000 mg/kg (rat) |
| | LC50/96h | 35.2 - 50.6 mg/l (Fish) |
- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritating effect.
 - **Sensitization:** No sensitizing effects known.
 - **Additional toxicological information:** Danger through skin resorption.
 - **Acute effects (acute toxicity, irritation and corrosivity)**
Irritant effect on the skin: slightly irritant (rabbit), OECD 404
Irritant effect on the eye: slightly irritant (rabbit), OECD 405

12 Ecological information

- **12.1. Toxicity**
- **Acquatic toxicity:** No further relevant information available.
- **12.2. Persistence and degradability** Not easily biodegradable
- **Other information:** 94 % in 27 d
- **Behaviour in environmental systems:**
- **12.3. Bioaccumulative potential** No relevant bioaccumulation is expected because of log Pow < 1.
- **12.4. Mobility in soil**
Distribution among the environmental compartments:
Water: 48,1 %
Air: 0,59 %
Soil: 51,3 %
Sediment: 0,09 %
- **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.

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· **Department issuing MSDS:** Product safety department

· **Contact:** +49 6221 13840-35

· **Abbreviations and acronyms:**

PBT: persistent, bioaccumulative, toxic substance (REACH)

vPvB: very persistent, very bioaccumulative substance (REACH)

REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

CLP: Regulation on classification, labelling and packaging of substances and mixtures

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

GHS: Globally Harmonized 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

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

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