

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Referenzlösung 9 Lösemittel je 1000ppm in Dimethylsulfoxid (DSO) geeignet für die Gaschromatographie**

Revision date: 25.08.2023

Product code: 13282

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

**1.1. Product identifier**

Referenzlösung 9 Lösemittel je 1000ppm in Dimethylsulfoxid (DSO) geeignet für die Gaschromatographie

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

**Use of the substance/mixture**

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

**Uses advised against**

Do not use for private purposes (household).

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

Company name:	AnalytiChem GmbH	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
E-mail:	info@analytichem.de	
Contact person:	Abteilung Produktsicherheit	Telephone: 0203/5194-107/117
E-mail:	produktsicherheit@analytichem.de	
Internet:	www.analytichem.de	
Responsible Department:	Abteilung Produktsicherheit	

**1.4. Emergency telephone number:**

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

**Further Information**

This product is a mixture. REACH Registration Number see section 3.

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

**Regulation (EC) No 1272/2008**

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

**2.2. Label elements**

**2.3. Other hazards**

No data available

**SECTION 3: Composition/information on ingredients**

**3.2. Mixtures**

**Hazardous components**

CAS No	Chemical name	Index No	REACH No	Quantity
	EC No			
	Classification (Regulation (EC) No 1272/2008)			
67-68-5	dimethyl sulfoxide			95 - < 100 %
	200-664-3		01-2119431362-50	

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	dimethyl sulfoxide	95 - < 100 %
		dermal: LD50 = ca. 40000 mg/kg; oral: LD50 = 28300 mg/kg	

**Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

No data available

**After inhalation**

Provide fresh air.

**After contact with skin**

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

**After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water.

Remove contact lenses, if present and easy to do. Continue rinsing.

**After ingestion**

Rinse mouth immediately and drink plenty of water.

Water, to which activated charcoal may be added

Call a physician immediately.

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

Headache

Gastrointestinal complaints

Irritant

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

Give sodium sulfate as laxative (1 tablespoon in 1 glass of water).

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**

Carbon dioxide (CO2)

Foam

Extinguishing powder

**Unsuitable extinguishing media**

no restriction

**5.2. Special hazards arising from the substance or mixture**

Combustible liquids

Hazardous combustion products

In case of fire may be liberated:

Carbon dioxide (CO2) Carbon monoxide

Sulphur oxides

In case of warming:

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Heating causes rise in pressure with risk of bursting.

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#### **5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.  
In case of fire and/or explosion do not breathe fumes.  
Avoid contact with skin, eyes and clothes.

#### **Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.  
Move undamaged containers from immediate hazard area if it can be done safely.  
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**

##### **For non-emergency personnel**

Provide adequate ventilation.  
Use personal protection equipment.  
Avoid contact with skin, eyes and clothes.  
Remove persons to safety.  
Emergency procedures  
Do not breathe dust/fume/gas/mist/vapours/spray.

##### **For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

#### **6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

#### **6.3. Methods and material for containment and cleaning up**

##### **For containment**

Cover drains.  
Prevent spread over a wide area (e.g. by containment or oil barriers).  
Collect in closed and suitable containers for disposal.  
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

##### **For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

##### **Other information**

Provide adequate ventilation.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

#### **6.4. Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

### SECTION 7: Handling and storage

#### **7.1. Precautions for safe handling**

##### **Advice on safe handling**

Read label before use. Handle and open container with care.  
When using do not eat, drink, smoke, sniff. Keep container tightly closed.  
Use personal protection equipment. Use extractor hood (laboratory).  
Do not breathe vapour/aerosol. Provide adequate ventilation.

##### **Advice on protection against fire and explosion**

Take action to prevent static discharges.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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#### Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs.  
Wash hands and face before breaks and after work and take a shower if necessary.  
When using do not eat or drink.  
Avoid: aerosol or mist formation Do not breathe vapour/aerosol.

#### Further information on handling

Take off immediately all contaminated clothing and wash it before reuse.  
Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. If handled uncovered, arrangements with local exhaust ventilation have to be used.

#### 7.2. Conditions for safe storage, including any incompatibilities

##### Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place.  
Store in a cool dry place.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Protect against:  
Heat

##### Hints on joint storage

No data available

##### Further information on storage conditions

Protect from sunlight.  
storage temperature +5°C - +30°C

#### 7.3. Specific end use(s)

Laboratory chemicals

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
67-68-5	dimethyl sulfoxide			
Worker DNEL, long-term		inhalation	systemic	484 mg/m <sup>3</sup>
Worker DNEL, long-term		inhalation	local	265 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	200 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	120 mg/m <sup>3</sup>
Consumer DNEL, long-term		inhalation	local	47 mg/m <sup>3</sup>
Consumer DNEL, long-term		dermal	systemic	100 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	60 mg/kg bw/day

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#### PNEC values

CAS No	Substance	
	Environmental compartment	Value
67-68-5	dimethyl sulfoxide	
	Freshwater	17 mg/l
	Marine water	1,7 mg/l
	Freshwater sediment	13,4 mg/kg
	Secondary poisoning	700 mg/kg
	Micro-organisms in sewage treatment plants (STP)	11 mg/l
	Soil	3,02 mg/kg

#### 8.2. Exposure controls

##### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

##### Individual protection measures, such as personal protective equipment

##### Eye/face protection

goggles

Face protection umbrella

##### 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.

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact: No data available

By short-term hand contact

Trade name/designation: KCL 898 Butoject®

Recommended material: Butyl caoutchouc (butyl rubber) 0,7 mm

Wearing time with occasional contact (splashes): > 10 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

##### Skin protection

Protective clothing

Take off immediately all contaminated clothing and wash it before reuse.

Wear suitable protective clothing. Take off immediately all contaminated clothing.

Wash hands and face before breaks and after work and take a shower if necessary.

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#### Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

#### 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:	clear	
Odour:	characteristic	
Odour threshold:	No data available	
Melting point/freezing point:		No data available
Boiling point or initial boiling point and boiling range:		~ 189 °C
Flammability:		No data available
Lower explosion limits:		No data available
Upper explosion limits:		No data available
Flash point:		~ 87 °C
Auto-ignition temperature:		No data available
Decomposition temperature:		No data available
pH-Value:		No data available
Viscosity / kinematic:		No data available
Water solubility:		No data available
Solubility in other solvents		
No data available		
Dissolution rate:		No data available
Partition coefficient n-octanol/water:		No data available
Dispersion stability:		No data available
Vapour pressure:		No data available
Vapour pressure:		No data available
Density:		0,99815 g/cm <sup>3</sup>
Relative density:		No data available
Bulk density:		No data available
Relative vapour density:		No data available
Particle characteristics:		No data available

### 9.2. Other information

#### Information with regard to physical hazard classes

##### Explosive properties

In case of warming:

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

##### Sustaining combustion:

No data available

##### Self-ignition temperature

Solid:

No data available

Gas:

No data available

##### Oxidizing properties

No data available

#### Other safety characteristics

##### Evaporation rate:

No data available

##### Solvent separation test:

No data available

##### Solvent content:

No data available

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Solid content:	No data available
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
Viscosity / dynamic:	No data available
Flow time:	No data available

#### Further Information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

In case of warming:  
Vapours may form explosive mixtures with air.

### 10.2. Chemical stability

Protect against:  
Humidity

### 10.3. Possibility of hazardous reactions

Oxidising agent  
Strong acid  
Acid chlorides, inorganic  
Nitric acid  
Acid halides  
Reducing agent  
Acid chlorides, inorganic  
permanganates, e.g. potassium permanganate

### 10.4. Conditions to avoid

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

### 10.5. Incompatible materials

plastic  
Metal

### 10.6. Hazardous decomposition products

SECTION 5: Firefighting measures

#### Further information

No data available

## SECTION 11: Toxicological information

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

#### Toxicokinetics, metabolism and distribution

No data available

#### Acute toxicity

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

#### ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

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CAS No	Chemical name					
	Exposure route	Dose	Species	Source	Method	
67-68-5	dimethyl sulfoxide					
	oral	LD50 mg/kg	28300	Rat	Toxicol. Appl. Pharmacol. 7: 104-112 (19)	OECD Guideline 401
	dermal	LD50 mg/kg	ca. 40000	Rat	J Clin Pharmacol, 8(5), 315-321 (1968)	Rats were immersed in a DMSO solution

**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.

**Information on likely routes of exposure**

No data available

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

No data available

**Practical experience**

No data available

**11.2. Information on other hazards**

**Endocrine disrupting properties**

No data available

**Other information**

Liver and kidney damage

**Further information**

Headache

Gastrointestinal complaints

Irritant

**SECTION 12: Ecological information**

**12.1. Toxicity**

There are no data available on the mixture itself.



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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
67-68-5	dimethyl sulfoxide					
	Acute fish toxicity	LC50 mg/l	34000	96 h	Pimephales promelas	Center for Lake Superior Environmental S
	Acute algae toxicity	ErC50 mg/l	17000	72 h	Pseudokirchneriella subcapitata	Study report (2009) OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	24600	48 h	Daphnia magna	Bull Environ Contam Toxicol, 70, 1264-12 OECD Guideline 202
	Acute bacteria toxicity	(EC50 mg/l)	10 - 100	0,5 h	activated sludge, domestic	Study report (1990) ISO 8192

**12.2. Persistence and degradability**

There are no data available on the mixture itself.

**12.3. Bioaccumulative potential**

There are no data available on the mixture itself.

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
67-68-5	dimethyl sulfoxide	-1,35

**BCF**

CAS No	Chemical name	BCF	Species	Source
67-68-5	dimethyl sulfoxide	3,16		EPI Suite, Version 3

**12.4. Mobility in soil**

There are no data available on the mixture itself.

**12.5. Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**12.7. Other adverse effects**

Avoid release to the environment.

**Further information**

Do not allow to enter into surface water or drains.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.  
Send to a physico-chemical treatment facility under observation of official regulations.  
Do not empty into drains.

**Contaminated packaging**

Handle contaminated packages in the same way as the substance itself.  
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

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#### SECTION 14: Transport information

##### Land transport (ADR/RID)

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

##### Inland waterways transport (ADN)

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

##### Marine transport (IMDG)

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

##### Air transport (ICAO-TI/IATA-DGR)

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

Information according to 2012/18/EU Not subject to 2012/18/EU (SEVESO III) (SEVESO III):

Marketing and use of explosives precursors (Regulation (EU) 2019/1148):

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

###### National regulatory information

Water hazard class (D): 1 - slightly hazardous to water

#### SECTION 16: Other information

##### Changes

This data sheet contains changes from the previous version in section(s): 12.

##### Further Information

The above information describes exclusively the safety requirements of the product and is based on our

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present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. 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.

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*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*