



# Material Safety Data Sheet

## Section 1: Chemical Product and Company Identification

**Product Name:** Dimethyl Sulfoxide

**CAS:** 67-68-5

**Synonym:** DMSO

**Chemical Formula:** C<sub>2</sub>H<sub>6</sub>OS

**Contact Information:**

**UFC Biotechnology, Inc.**

435 Creekside Drive, Suite 5

Amherst, New York 14228

Office Number: 716-777-3776

**INFOTRAC (24HR Emergency Telephone), call:**

1-800-535-5053

**International INFOTRAC, call:** 1- 352-323-3500

**For non-emergency assistance, call:** 1-716-777-3776

## Section 2: Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 4)

### 2.2 GHS Label elements, including precautionary statements

Signal word

**Warning**

**Hazard statement(s)**

H227 Combustible liquid.

**Precautionary statement(s)**

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.

P370 + P378 In case of fire: Use CO<sub>2</sub>, dry chemical or foam to extinguish.

P501 Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None identified

## Section 3: Composition, Information on Ingredients

### 3.1 Substances

Synonyms : DMSO

Formula : C<sub>2</sub>H<sub>6</sub>OS

Molecular weight : 78.13 g/mol

CAS-No. : 67-68-5

EC-No. : 200-664-3

Name	Classification	% by Weight
Dimethyl sulfoxide	Flam. Liq. 4; H227	100% ≤

## Section 4: First Aid Measures

### 4.1 Description of first-aid measures

General advice Show this material safety data sheet to the doctor in attendance.

If inhaled After inhalation: fresh air.

In case of skin contact In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

	In case of eye contact	After eye contact: rinse out with plenty of water. Remove contact lenses.
	If swallowed	After swallowing: immediately drink water (two glasses at most). Consult a physician.
<b>4.2</b>	<b>Most important symptoms and effects, both acute and delayed</b>	
		The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
<b>4.3</b>	<b>Indication of any immediate medical attention and special treatment needed</b>	
		No data available

### Section 5: Firefighting Measures

<b>5.1</b>	<b>Extinguishing media</b>	
	<b>Suitable extinguishing media</b>	Water Foam Carbon dioxide (CO <sub>2</sub> ) Dry powder
	<b>Unsuitable extinguishing media</b>	For this substance/mixture no limitations of extinguishing agents are given.
<b>5.2</b>	<b>Special hazards arising from the substance or mixture</b>	
		Carbon oxides Sulfur oxides Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire.
<b>5.3</b>	<b>Advice for firefighters</b>	Stay in danger area only with self-contained breathing apparatus.
<b>5.4</b>	<b>Further information</b>	Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### Section 6: Accidental Release Measures

<b>6.1</b>	<b>Personal precautions, protective equipment and emergency procedures</b>	
		Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
<b>6.2</b>	<b>Environmental precautions</b>	Do not let product enter drains. Risk of explosion.
<b>6.3</b>	<b>Methods and materials for containment and cleaning up</b>	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.
<b>6.4</b>	<b>Reference to other sections</b>	For disposal see section 13.

### Section 7: Handling and Storage

<b>7.1</b>	<b>Precautions for safe handling</b>	
	<b>Advice on protection against fire and explosion</b>	Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
	<b>Hygiene measures</b>	Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.
<b>7.2</b>	<b>Conditions for safe storage, including any incompatibilities</b>	
	<b>Storage conditions</b>	Tightly closed. Store under inert gas. hygroscopic
	<b>Storage class</b>	Storage class (TRGS 510): 4.1B: Combustible liquids
<b>7.3</b>	<b>Specific end use(s)</b>	
		Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

### Section 8: Exposure Controls/Personal Protection

<b>8.1</b>	<b>Control parameters</b>	
	<b>Ingredients with workplace control parameters</b>	Dimethyl sulfoxide (CAS # 67-68-5) TWA 250ppm.
<b>8.2</b>	<b>Exposure controls</b>	

**Appropriate engineering controls** Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

**Personal protective equipment**

**Eye/face protection** Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

**Skin protection** Handle with impervious gloves.

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)).

Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:KCL 741 Dermatril® L

Splash contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:KCL 741 Dermatril® L

**Body Protection** Flame retardant antistatic protective clothing.

**Respiratory protection** required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure** Do not let product enter drains. Risk of explosion.

**Section 9: Physical and Chemical Properties**

Physical State	Solid
Physical State	Liquid
Appearance	Colorless
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	18.4 °C / 65.1 °F
Boiling Point/Range	189 °C / 372.2 °F
Flash Point	87 °C / 188.6 °F
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	42 vol %
Lower	2.6 vol %
Vapor Pressure	0.55 mbar @ 20°C
Vapor Density	2.7
Specific Gravity	1.100
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	301 °C / 573.8 °F
Decomposition Temperature	> 190°C Viscosity 1.98 mPa.s @ 25°C
Molecular Formula	C2 H6 O S
Molecular Weight	78.13

**Section 10: Stability and Reactivity Data**

Reactive Hazard	No
Stability	Hygroscopic.
Conditions to Avoid	Incompatible products. Excess heat. Exposure to moist air or water. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible products.	Avoid dust formation. Exposure to moist air or water.
Incompatible Materials	Strong oxidizing agents, Strong acids, Strong bases, Alkali metals
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO2), Sulfur oxides, Sulfides, Fomaldehyde
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	Thermal decomposition can take place above 189°C / 372°F.



### Section 11: Toxicological Information

#### 11.1 Information on toxicological effects

**Acute toxicity** LD50 Oral - Rat - 28300 mg/kg  
LD50 Dermal - Rat - 40000 mg/kg  
LD50 Inhalation - Rat - >5.33 mg/L, 4h

**Skin corrosion/irritation** Skin - Rabbit Result: Irritations (OECD Test Guideline 404)

**Serious eye damage/eye irritation** Eyes - Rabbit Result: Irreversible effects on the eye (OECD Test Guideline 405)

**Respiratory or skin sensitization** Maximization Test Result: negative Remarks: (IUCLID)

**Germ cell mutagenicity** No data available

#### **Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity** No data available

**Specific target organ toxicity - single exposure** No data available

**Specific target organ toxicity - repeated exposure** No data available

**Aspiration hazard** No data available

#### 11.2 Additional Information

The toxicological properties have not been thoroughly investigated.

### Section 12: Ecological Information

#### 12.1 Toxicity

The LC50 (96hrs) for ten species of fish range from 32500 to 43000ppm

#### 12.2 Persistence and degradability

No data available

#### 12.3 Bioaccumulative potential

No data available

#### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Endocrine disrupting properties

No data available

#### 12.7 Other adverse effects

No data available

### Section 13: Disposal Considerations

#### 13.1 Waste treatment methods

##### **Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber by a licensed disposal company.

### Section 14: Transport Information

**DOT (US)** Not a dangerous goods during transportation

**IMDG** Not regulated

**IATA** Not regulated

### Section 15: Other Regulatory Information

**US Federal Regulations**



Us Toxic Substances Control Act (TSCA): Not listed  
SARA 302: No chemicals were found .  
SARA 313: No chemicals were found.  
SARA 311/312 Hazards: DMSO : fire hazard, chronic health hazard  
Acute Health Hazard: Yes  
Chronic Health Hazard: No  
Fire Hazard: Yes  
Sudden Release of Pressure Hazard: No  
Reactive Hazard: No  
**WHMIS Hazard Class:**  
Flammable liquids, category 4

### Section 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

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