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

1.1. Product identifier

Product No: 12611
Product name: DMSO (Dimethyl Sulfoxide)
Reach registration number: This substance/mixture contains only ingredients which have been registered, or are exempt from registration, according to Regulation (EC) No. 1907/2006.

Contains

Chemical Name: dimethyl sulfoxide (90 - 100%)
Index No.: Not Listed
CAS No.: 67-68-5

Formula: C₉H₆O₅S
Molecular Weight: 78.1 g/mol

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

Identified uses: For research use only
Uses advised against: None

1.3. Details of the supplier of the safety data sheet

Importer (Applicable in EU only): Cell Signaling Technology Europe B.V.
Schuttersveld 2
2316 ZA Leiden
The Netherlands
TEL: +31 (0)71 7200 200
FAX: +31 (0)71 891 0098
Website: www.cellsignal.com
E-mail Address: info@cellsignal.eu

Manufacturer: Cell Signaling Technology, Inc.
3 Trask Lane
Danvers, MA 01923
United States
TEL: +1 978 867 2300
FAX: +1 978 867 2400

1.4. Emergency telephone number

CHEMTREC: 24 hours a day, 7 days a week, 365 days a year
+1 703 527 3887 (INTERNATIONAL) +1 800 424 9300 (NORTH AMERICA)

Europe: 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

<table>
<thead>
<tr>
<th>Skin corrosion/irritation</th>
<th>Category 2 - (H315)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2 - (H319)</td>
</tr>
</tbody>
</table>

For the full text of the H-phrases & EUH-phrases mentioned in this Section, see Section 16
2.2. Label elements

![Warning symbol]

**Signal word**
Warning

**Hazard statement(s)**
H315 - Causes skin irritation
H319 - Causes serious eye irritation

**Precautionary statement(s)**
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

2.3. Other hazards
Combustible liquid. May accelerate skin absorption of other materials. Special attention needed when toxic materials are present in dimethyl sulfoxide because of enhanced skin absorption.

### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>Formula</th>
<th>Chemical nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMSO; Methyl sulfoxide; Methane, 1,1'-sulfinylbis-; Methane, sulfinylbis-; Sulfinylbis-methane (9CI); Demasorb</td>
<td>C₂H₆O₅S</td>
<td>Organic solvent.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
<th>EC No</th>
<th>Classification (1272/2008)</th>
<th>REACH Registration Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyl sulfoxide</td>
<td>67-68-5</td>
<td>100</td>
<td>200-664-3</td>
<td>Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)</td>
<td>no data available</td>
</tr>
</tbody>
</table>

For the full text of the R-phrases mentioned in this Section, see Section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

**General advice**
Immediate medical attention is not required. Show this safety data sheet to the doctor in attendance. If symptoms persist, call a physician.

**Inhalation**
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediate medical attention is not required. If symptoms persist, call a physician.
12611 DMSO (Dimethyl Sulfoxide)

Skin contact
Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Immediate medical attention is not required. If symptoms persist, call a physician.

Eye contact
Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing.

Ingestion
Clean mouth with water. Drink plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician.

Protection of first-aiders
Use personal protective equipment.

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

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

Notes to physician
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media
Cool containers / tanks with water spray.

Unsuitable Extinguishing Media
No information available.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Use personal protective equipment. Avoid contact with the skin and the eyes. Remove all sources of ignition. Heat, flames and sparks. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

For emergency responders
Use personal protection recommended in Section 8.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. Prevention of fire and explosion. A vapor suppressing foam may be used to reduce vapors. Try to prevent the material from entering drains or water courses. Do not allow material to contaminate ground water system. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains. Dam up.

6.4. Reference to other sections

See Sections 8 & 13 for additional information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Wear personal protective equipment. There is a hazard associated with rags, paper or any other material used to remove spills
which become soaked with product. Avoid accumulation of these: they are to be disposed of safely after use. Avoid static electricity build up with connection to earth. Use only in area provided with appropriate exhaust ventilation. Prevent the formation of vapors, mists and aerosols. When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Provide regular cleaning of equipment, work area and clothing.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from direct sunlight.

7.3. Specific end use(s)

Use as a laboratory reagent.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>European Union</th>
<th>United Kingdom</th>
<th>France</th>
<th>Spain</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyl sulfoxide</td>
<td>TWA 50 ppm</td>
<td>TWA 160 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Italy</th>
<th>Portugal</th>
<th>Netherlands</th>
<th>Finland</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyl sulfoxide</td>
<td>TWA 50 ppm</td>
<td>TWA 160 mg/m³</td>
<td>STEL 100 ppm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Austria</th>
<th>Switzerland</th>
<th>Poland</th>
<th>Norway</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyl sulfoxide</td>
<td>H*</td>
<td>H*</td>
<td>TWA 50 ppm</td>
<td>TWA 50 ppm</td>
<td></td>
</tr>
</tbody>
</table>

#### 8.2. Exposure controls

**Appropriate engineering controls**
Showers, eyewash stations, and ventilation systems.

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

Eye/face protection: Tightly fitting safety goggles. Face-shield.

Skin protection:
Hand protection: Impervious gloves.

Respiratory protection: When using a mask or half mask: (vapor). Respirator with a vapor filter (EN 141). Type A. (aerosol). Respirator with combination filter for vapor/particulate (EN 141). Type A/P2. The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

Environmental Exposure Controls
Do not allow material to contaminate ground water system.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state: Liquid
**12611 DMSO (Dimethyl Sulfoxide)**

**Appearance**
Clear

**Color**
Colorless

**Odor**
Sulfur

**Odor Threshold**
No information available

**Property** | **Values** | **Remarks • Method**
---|---|---
**pH**
Melting point/freezing point
Initial boiling point and boiling range | No information available | No information available
**Flash point**
Evaporation rate
Flammability (solid, gas)
Upper flammability limit
Lower flammability limit
Vapor pressure
Vapor density
Relative density
Solubility
Partition coefficient: n-octanol/water
Autoignition temperature
Decomposition temperature
Viscosity
Explosive properties
Oxidizing properties | No information available | No information available

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**
No information available.

**10.2. Chemical stability**
Stable under normal conditions.

**10.3. Possibility of hazardous reactions**
Hazardous polymerization
Hazardous reactions
Hazardous polymerization does not occur.
Vapors may form explosive mixtures with air. Exothermic reaction possible with strong oxidizers.

**10.4. Conditions to avoid**
Temperatures above 87 °C / 188.6 °F.

**10.5. Incompatible materials**
Strong oxidizing agents.

**10.6. Hazardous decomposition products**
Thermal decomposition can lead to release of irritating gases and vapors: Sulfur oxides.

**SECTION 11: Toxicological information**
12611 DMSO (Dimethyl Sulfoxide)

11.1. Information on toxicological effects

This material should only be handled by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals. It should be borne in mind that the toxicological and physiological properties of this compound is not well defined.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyl sulfoxide</td>
<td>14500 mg/kg (Rat)</td>
<td>40000 mg/kg (Rat)</td>
<td>-</td>
</tr>
</tbody>
</table>

Information on likely routes of exposure

- **Inhalation**: There is no data available for this product.
- **Eye contact**: Contact with eyes may cause irritation.
- **Skin contact**: Irritating to skin.
- **Ingestion**: There is no data available for this product.

**Symptoms**

- **Skin corrosion/irritation**: Irritating to skin.
- **Serious eye damage/eye irritation**: Irritating to eyes.
- **Sensitization**: No information available.
- **Mutagenic effects**: No information available.
- **Carcinogenic effects**: No information available.
- **Reproductive toxicity**: No information available.
- **STOT - single exposure**: No information available.
- **STOT - repeated exposure**: No information available.
- **Aspiration Hazard**: No information available.
- **Other information**: May accelerate skin absorption of other materials. Special attention needed when toxic materials are present in dimethyl sulfoxide because of enhanced skin absorption.

SECTION 12: Ecological information

12.1. Toxicity

No information available.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicity to algae</th>
<th>Toxicity to fish</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyl sulfoxide</td>
<td>EC50 12350 - 25500 mg/L (Skeletonema costatum) 96 h</td>
<td>LC50 40 g/L (Lepomis macrochirus) 96 h</td>
<td>EC50 7000 mg/L (Daphnia species) 24 h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC50 33 - 37 g/L (Oncorhynchus mykiss) 96 h</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC50 34000 mg/L (Pimephales promelas) 96 h</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC50 41.7 g/L (Cyprinus carpio) 96 h</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

- **Bioaccumulation**: Not likely to bioaccumulate.
- **Bioconcentration factor (BCF)**: <1

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Octanol-Water Partition Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyl sulfoxide</td>
<td>-2.03</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

Mobile.

12.5. Results of PBT and vPvB assessment
12611 DMSO (Dimethyl Sulfoxide)

No information available.

12.6. Other adverse effects

No information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues / unused products
Dispose of in accordance with local regulations.

Contaminated packaging
Empty containers may contain flammable or explosive vapours. Do not burn, or use a cutting torch on, the empty drum. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other information
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

IMDG/IMO
14.1 UN number
Not regulated
14.2 UN proper shipping name
Not regulated
14.3 Transport hazard class(es)
Not regulated
14.4 Packing group
Not regulated
14.5 Environmental hazards
None
14.6 Special precautions for user
None
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not regulated

ADR/RID
14.1 UN number
Not regulated
14.2 UN proper shipping name
Not regulated
14.3 Transport hazard class(es)
Not regulated
14.4 Packing group
Not regulated
14.5 Environmental hazards
None
14.6 Special precautions for user
None

IATA
14.1 UN number
Not regulated
14.2 UN proper shipping name
Not regulated
14.3 Transport hazard class(es)
Not regulated
14.4 Packing group
Not regulated
14.5 Environmental hazards
None
14.6 Special precautions for user
None

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Candidate List of Substances of Very High Concern for Authorization Information

This product does not contain Substances of Very High Concern (SVHC).

SEVESO Directive Information

This product does not contain substances identified in the SEVESO Directive.

International inventories
TSCA 8(b)
Complies
15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Full text of H-Statements referred to under Sections 2 and 3

H315 - Causes skin irritation
H319 - Causes serious eye irritation

Classification procedure: Expert judgment and weight of evidence determination.
Issuing Date: 2014-05-15
Revision Date: 2017-08-25

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.