Safety Data Sheet (SDS)  According to the REACH Regulation (EC) No. 1907/2006

Issuing Date:  2017-07-10  Version:  1

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

1.1. Product identifier

Product No  2976
Product name  Phospho-mTOR (Ser2448) (49F9) Rabbit mAb (IHC Specific)
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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Index No.</th>
<th>CAS No</th>
</tr>
</thead>
<tbody>
<tr>
<td>glycerol (30-60)</td>
<td>Not Listed</td>
<td>56-81-5</td>
</tr>
<tr>
<td>sodium azide (0 - 10%)</td>
<td>011-004-00-7</td>
<td>26628-22-8</td>
</tr>
</tbody>
</table>

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

Identified uses  For research use only

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

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

Website  www.cellsignal.com
E-mail Address  info@cellsignal.eu

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

This substance is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

2.2. Label elements

Supplemental hazard statement(s)
EUH210 - Safety data sheet available on request
2.3. Other hazards

May produce an allergic reaction.
For the full text of the H-phrases & EUH-phrases mentioned in this Section, see Section 16

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
<th>EC No</th>
<th>Classification</th>
<th>REACH Registration Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>glycerol</td>
<td>56-81-5</td>
<td>30-60</td>
<td>200-289-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sodium azide</td>
<td>26628-22-8</td>
<td>0.02</td>
<td>247-852-1</td>
<td>Acute Tox. 2 (H300) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) (EUH032)</td>
<td>no data available</td>
</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice
Use first aid treatment according to the nature of the injury. When symptoms persist or in all cases of doubt seek medical advice.

Inhalation
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur.

Skin contact
Wash skin with soap and water.

Eye contact
Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing. Get medical attention immediately if irritation persists.

Ingestion
Clean mouth with water and afterwards drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

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

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

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
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel  Avoid contact with skin, eyes and clothing. Use personal protective equipment. For personal protection see section 8.

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 product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

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.

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. See section 8. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

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>glycerol</td>
<td>TWA 10 mg/m³</td>
<td>TWA 10 mg/m³</td>
<td>TWA 10 mg/m³</td>
<td>TWA 10 mg/m³</td>
<td>Ceiling / Peak: 400 mg/m³ TWA: 200 mg/m³</td>
</tr>
<tr>
<td>sodium azide</td>
<td>TWA 0.1 mg/m³</td>
<td>STEL 0.3 mg/m³</td>
<td>TWA 0.1 mg/m³</td>
<td>TWA 0.1 mg/m³</td>
<td>TWA 0.1 mg/m³</td>
</tr>
<tr>
<td></td>
<td>STEL 0.3 mg/m³</td>
<td>STEL 0.3 mg/m³</td>
<td>STEL 0.3 mg/m³</td>
<td>TWA 0.1 mg/m³</td>
<td>TWA: 0.2 mg/m³</td>
</tr>
<tr>
<td></td>
<td>S*</td>
<td>TWA 0.1 mg/m³</td>
<td>STEL 0.3 mg/m³</td>
<td>TWA 0.1 mg/m³</td>
<td>Ceiling / Peak: 0.4 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>P*</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>glycerol</td>
<td>TWA 10 mg/m³</td>
<td>TWA 20 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sodium azide</td>
<td>TWA 0.1 mg/m³</td>
<td>TWA 0.3 mg/m³</td>
<td>Huid*</td>
<td>TWA 0.1 mg/m³</td>
<td>TWA 0.1 mg/m³</td>
</tr>
<tr>
<td></td>
<td>STEL 0.3 mg/m³</td>
<td>STEL 0.3 mg/m³</td>
<td></td>
<td>TWA 0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pelle*</td>
<td>Ceiling 0.29 mg/m³</td>
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<td>TWA: 0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ceiling 0.11 ppm C(A4)</td>
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<td>TWA: 0.1 mg/m³</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>P*</td>
<td></td>
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</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>glycerol</td>
<td>SS-C**</td>
<td>TWA 10 mg/m³</td>
<td></td>
<td>TWA 10 mg/m³</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 If splashes are likely to occur, wear: Tightly fitting safety goggles
Skin protection
   Hand protection Impervious gloves.
   Other Wear suitable protective clothing.
Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Environmental Exposure Controls
No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
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</tr>
<tr>
<td>Appearance</td>
<td>Clear</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>7.5</td>
<td>@ 20 °C No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Relative density</td>
<td></td>
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<tr>
<td>Solubility</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
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<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
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<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
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<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td></td>
<td>No information available</td>
</tr>
</tbody>
</table>

9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening point</td>
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<td>No information available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>VOC content</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Density</td>
<td></td>
<td>No information available</td>
</tr>
</tbody>
</table>
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 polymerization does not occur.
Hazardous reactions: None under normal processing.

10.4. Conditions to avoid
Extremes of temperature and direct sunlight. Over a period of time, sodium azide may react with copper, lead, brass, or solder in plumbing systems to form an accumulation of the HIGHLY EXPLOSIVE compounds of lead azide & copper azide.

10.5. Incompatible materials
Strong oxidizing agents. Strong acids.

10.6. Hazardous decomposition products
Nitrogen oxides (NOx).

SECTION 11: Toxicological information

11.1. Information on toxicological effects
This product is for experimental uses only. The product has not been completely analyzed and all of the hazards may not be known. Please use caution while handling this product.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>glycerol</td>
<td>= 12600 mg/kg (Rat)</td>
<td>&gt; 10 g/kg (Rabbit)</td>
<td>&gt; 570 mg/m³ (Rat) 1 h</td>
</tr>
<tr>
<td>sodium azide</td>
<td>= 27 mg/kg (Rat)</td>
<td>= 20 mg/kg (Rabbit) = 50 mg/kg (Rat)</td>
<td>-</td>
</tr>
</tbody>
</table>

Information on likely routes of exposure

Inhalation: Avoid breathing vapors or mists. May cause irritation of respiratory tract.
Eye contact: Avoid contact with eyes. May cause slight irritation.
Skin contact: Avoid contact with skin.
Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

Skin corrosion/irritation: No information available.
Serious eye damage/eye irritation: No information available.
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: No information available.

SECTION 12: Ecological information
12.1. Toxicity

<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>glycerol</td>
<td>-</td>
<td>LC50 51 - 57 mL/L (Oncorhynchus mykiss) 96 h</td>
<td>EC50 500 mg/L (Daphnia magna) 24 h</td>
</tr>
<tr>
<td>sodium azide</td>
<td>EC50 0.35 mg/L (Pseudokirchneriella subcapitata) 96 h</td>
<td>LC50 0.8 mg/L (Oncorhynchus mykiss) 96 h LC50 5.46 mg/L (Pimephales promelas) 96 h LC50 0.7 mg/L (Lepomis macrochirus) 96 h</td>
<td>LC100 1 mg/L (Orconectes rusticus) 96 h</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Bioaccumulation | No information available.
Bioconcentration factor (BCF) | No information available.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Octanol-Water Partition Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>glycerol</td>
<td>-1.76</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

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 should be taken to an approved waste handling site for recycling or disposal.
Other information | 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
2976 Phospho-mTOR (Ser2448) (49F9) Rabbit mAb (IHC Specific)

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
DSL/NDSL Complies
EINECS/ELINCS Complies
ENCS -
IECSC Complies
KECL -
PICCS -
AICS Complies

International inventories legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

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
This substance/mixture does not meet the criteria for classification in accordance with Regulation (EC) No. 1272/2008

Classification procedure: Expert judgment and weight of evidence determination.
Issuing Date: 2017-07-10
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.