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

1.1. Product identifier

Product No: 4651  
Product name: Rac1/Cdc42 Antibody  
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>
</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.  
Cell Signaling Technology, Inc.
Schuttersveld 2  
3 Trask Lane  
2316 ZA Leiden  
2315 Enfield, MA 01923  
The Netherlands  
United States
TEL: +31 (0)71 7200 200  
TEL: +1 978 867 2300  
FAX: +31 (0)71 891 0098  
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
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 (1272/2008)</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>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. Call a physician 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

No information available.

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

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  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

Handle in accordance with good industrial hygiene and safety practice. 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.

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></td>
<td>STEL 30 mg/m³</td>
<td>TWA 10 mg/m³</td>
<td>TWA 10 mg/m³</td>
<td>Ceiling / Peak: 400 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 10 mg/m³</td>
<td></td>
<td></td>
<td>TWA: 200 mg/m³</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></td>
<td>TWA 10 mg/m³</td>
<td></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>glycerol</td>
<td></td>
<td>TWA 50 mg/m³</td>
<td>TWA 10 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 100 mg/m³</td>
<td></td>
<td>TWA 10 mg/m³</td>
<td>STEL 30 mg/m³</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>
<td></td>
</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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.5</td>
<td>@ 20 °C</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>
<td>No information available</td>
</tr>
<tr>
<td>Solubility</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td></td>
<td>No information available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td></td>
<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>
<td></td>
<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>
<td></td>
<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

<table>
<thead>
<tr>
<th>Property</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous polymerization</td>
<td>Hazardous polymerization does not occur.</td>
</tr>
<tr>
<td>Hazardous reactions</td>
<td>None under normal processing.</td>
</tr>
</tbody>
</table>
10.4. Conditions to avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

---

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>
</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**: No information available.

**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>
</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

**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
4651 Rac1/Cdc42 Antibody

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**

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA 8(b)</td>
<td>-</td>
</tr>
<tr>
<td>DSL/NDSL</td>
<td>Complies</td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td>-</td>
</tr>
<tr>
<td>ENCS</td>
<td>-</td>
</tr>
<tr>
<td>IECSC</td>
<td>Complies</td>
</tr>
<tr>
<td>KECL</td>
<td>-</td>
</tr>
<tr>
<td>PICCS</td>
<td>-</td>
</tr>
<tr>
<td>AICS</td>
<td>Complies</td>
</tr>
</tbody>
</table>

**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.