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

1.1. Product identifier

Product No 3972
Product name GRB2 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.
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 (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 TWA: 200 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 10 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glycerol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glycerol</td>
<td>Italy</td>
<td>TWA 10 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Portugal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glycerol</td>
<td>Austria</td>
<td>TWA 50 mg/m³</td>
<td>TWA 10 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Switzerland</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glycerol</td>
<td>Poland</td>
<td>TWA 10 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Norway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glycerol</td>
<td>Ireland</td>
<td>TWA 10 mg/m³</td>
<td></td>
<td></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>
<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>
<tr>
<td>pH</td>
<td>7.5</td>
<td>@ 20 °C</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

9.2. Other information
- Softening point: No information available
- Molecular Weight: No information available
- Solubility in other solvents: No information available
- VOC content: No information available
- Density: 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 polymerization does not occur.
- **Hazardous reactions**: None under normal processing.
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/m^3 (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
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>Description</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.

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**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.