SECTION 1. Identification

Product identifier

Product No 9973
Product name Cyclosporin A

Recommended use of the chemical and restrictions on use

Identified uses This product is intended for research purposes only.

Manufacturer address 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
Email address support@cellsignal.com
Emergency telephone number In case of emergency call CHEMTREC 1-800-424-9300

SECTION 2. Hazard(s) identification

Classification
This substance/mixture is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
</tr>
<tr>
<td>Category 4</td>
</tr>
<tr>
<td>Carcinogenicity</td>
</tr>
<tr>
<td>Category 1A</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
</tr>
<tr>
<td>Category 1B</td>
</tr>
<tr>
<td>Effects on or via lactation</td>
</tr>
<tr>
<td>Effects on or via lactation</td>
</tr>
</tbody>
</table>

GHS Label elements, including precautionary statements

Signal Word Danger

Hazard statement(s)
Harmful if swallowed. May cause cancer. May damage fertility or the unborn child. May cause harm to breast-fed children.
Precautionary Statement(s)
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Avoid contact during pregnancy/while nursing. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.
IF exposed or concerned: Get medical advice/attention.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
Store locked up.
Dispose of contents/container to an approved waste disposal plant.

**Supplementary Hazard Information**
May be harmful by inhalation. May be harmful in contact with skin. May be irritating to eyes, respiratory system and skin.
**Hazards not otherwise classified (HNOC)**
Not applicable.

### SECTION 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Molecular Weight</th>
<th>1202.6239</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclo(L-alanyl-D-alanyl-N-methyl-L-leucyl-N-methyl-L-leucyl-N-methyl-L-leucyl-N-methyl-L-valyl-((3R,4R,6E)-6,7-didehydro-3-hydroxy-N,4-dimethyl-L-2-aminoctanoyl-L-2-a minobutanol-N-methylglycyl-N-methyl-L-leucyl-L-valyl-N-methylleucyl)</td>
<td>59865-13-3</td>
<td>100</td>
</tr>
</tbody>
</table>

### SECTION 4. First-aid measures

#### Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately if irritation persists.

#### Skin contact
Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation or rash occurs: Get medical advice/attention.

#### Inhalation
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur. If breathing is difficult, give oxygen.

#### Ingestion
Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

#### Most important symptoms and effects, both acute and delayed
Adverse effects from overexposure or overdose may include headache, nausea, central nervous system depression, burning sensation in the mouth, altered taste, hyperesthesia of the hands, burning sensation in the feet, sore gums. flushing of the face, sensation of increased abdominal girth, foot swelling, mild stomach upset, abdominal pain with mild hepatotoxicity, anxiety, diarrhea, vomiting, perspiration, sinus tachycardia, increased blood pressure and headache; vomiting and drowsiness. Principal adverse reactions to cyclosporine therapy are renal dysfunction, tremor, hirsutism, hypertension, hyperlipidemia, gum hyperplasia and nephrotoxicity.

#### Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

#### Advice for emergency responders

**General advice**
For further assistance, contact your local Poison Control Center.

**Protection of first-aiders**
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### SECTION 5. Fire-fighting measures

**Precautionary Statement(s)**
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Avoid contact during pregnancy/while nursing. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

IF exposed or concerned: Get medical advice/attention.

**Protection of first-aiders**
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

**Supplementary Hazard Information**
May be harmful by inhalation. May be harmful in contact with skin. May be irritating to eyes, respiratory system and skin.
**Extinguishing media**

**Suitable Extinguishing Media**
- Water spray.
- Carbon dioxide (CO₂).
- Dry chemical.
- Foam.

**Unsuitable Extinguishing Media**
- CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical**

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

**Explosion Data**

- **Sensitivity to Mechanical Impact**: None.
- **Sensitivity to Static Discharge**: None.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

---

**SECTION 6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**
- Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing. Use personal protective equipment. For personal protection see section 8. Wash thoroughly after handling.

**Other information**
- No information available.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

**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**
- For dust cleanup use protective equipment. Avoid dust formation. Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust.

---

**SECTION 7. Handling and storage**

**Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Avoid contact with skin, eyes and clothing. Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed. In case of insufficient ventilation, wear suitable respiratory equipment.

**Conditions for safe storage, including any incompatibilities**

- **Technical measures/Storage conditions**: Recommended storage temperature -20 °C.
- **Packaging material**: No information available.
- **Incompatible products**: None known based on information supplied.

---

**SECTION 8. Exposure controls/personal protection**

**Control parameters**

**Appropriate engineering controls**
Individual protection measures, such as personal protective equipment

Personal protective equipment (PPE) needs to be selected depending on the implemented engineering controls, frequency/duration of work activities and the concentrations of the hazardous substance.

<table>
<thead>
<tr>
<th>Protection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye/face protection</td>
<td>Safety glasses with side-shields</td>
</tr>
<tr>
<td>Skin and body protection</td>
<td>Wear protective gloves/clothing.</td>
</tr>
<tr>
<td>Respiratory protection</td>
<td>If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.</td>
</tr>
</tbody>
</table>

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Powder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>White to off-white</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>148-151 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td>Practically insoluble</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softening point</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>1202.6239</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOC content</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk Density VALUE</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 10. Stability and reactivity

Reactivity

No information available.

Chemical stability

Stable under recommended storage conditions.
Possibility of hazardous reactions

Hazardous reactions
None under normal processing.

Hazardous polymerization
None under normal processing.

Conditions to Avoid

No information available.

Incompatible Materials

None known based on information supplied.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors: Nitrogen oxides (NOx).

SECTION 11. Toxicological information

Information on likely routes of exposure

Inhalation
May be harmful if inhaled. May cause irritation of respiratory tract.

Eye contact
Contact with eyes may cause irritation.

Skin contact
Prolonged contact may cause redness and irritation. May be harmful in contact with skin.

Ingestion
Harmful if swallowed.

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>Cyclo(L-alanyl-D-alanyl-N-methyl-L-leucyl-N-methyl-L-leucyl-L-valyl-((3R,4R,6E)-6,7-didehydro-3-hydroxy-N,4-dimethyl-L-2-aminoctanoyl-L-2-aminobutanoyl-N-methylglycyl-N-methyl-L-leucyl-L-valyl-N-methylleucyl))</td>
<td>= 1480 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Symptoms
Adverse effects from overexposure or overdose may include headache, nausea, central nervous system depression, burning sensation in the mouth, altered taste, hyperesthesia of the hands, burning sensation in the feet, sore gums, flushing of the face, sensation of increased abdominal girth, foot swelling, mild stomach upset, abdominal pain with mild hepatotoxicity, anxiety, diarrhea, vomiting, perspiration, sinus tachycardia, increased blood pressure and headache; vomiting and drowsiness. Principal adverse reactions to cyclosporine therapy are renal dysfunction, tremor, hirsutism, hypertension, hyperlipidemia, gum hyperplasia and nephrotoxicity.

Sensitization
No information available.

Mutagenic effects
In a single study, Cyclosporin was reported to increase the incidence of chromosomal aberrations in the lymphocytes of kidney transplant patients. It did not induce dominant lethal mutations in mice, chromosomal aberrations in the bone marrow of Chinese hamsters or micronuclei in the bone marrow of Chinese hamsters or mice in vivo. It induced sister chromatid exchange in human peripherallylymphocytes in vitro but did not induce gene mutations in Chinese hamster cells. Cyclosporin did not induce mutations in Salmonella typhimurium.

Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen. In case reports, both lymphomas and Kaposi's sarcoma have been associated frequently with exposure to Cyclosporin. Four cohort studies recorded a high incidence of lymphoma in
organ transplant recipients; in two of these, Cyclosporin was given without azathioprine or cytotoxic drugs. In several cases, there has been well-documented regression of lymphoma following withdrawal of the drug.

Reproductive toxicity
Nephrotoxicity, a drug side-effect in adults, was identified in experimental animal offspring exposed prenatally to Cyclosporines. Cyclosporines have been reported to cross the human placenta and pass into breast milk.

STOT - single exposure
No information available.

STOT - repeated exposure
No information available.

Target Organ Effects
Kidney, Liver, Central nervous system (CNS), Immune system.

Neurological effects
No information available.

Aspiration Hazard
No information available.

SECTION 12. Ecological information

Ecotoxicity
100% of the mixture consists of components of unknown hazards to the aquatic environment.

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility
No information available.

Other adverse effects
No information available.

SECTION 13. Disposal considerations

Waste Disposal Methods
Dispose of in accordance with all applicable national environmental laws and regulations.

Disposal considerations
Do not empty into drains; dispose of this material and its container in a safe way.

SECTION 14. Transport information

This material is not subject to regulation as a hazardous material for shipping.

SECTION 15. Regulatory information

North American Inventory Listing

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA 8(b)</th>
<th>TSCA 12(b)</th>
<th>DSL</th>
<th>NDSL</th>
</tr>
</thead>
</table>

Canadian Workplace Hazardous Materials Information System (WHMIS) Classification
This product does not meet the criteria for classification under the Hazardous Products Act.

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

**Clean Water Act**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**California Proposition 65**

This product contains the following Proposition 65 chemicals:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Prop. 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclo(L-alanyl-D-alanyl-N-methyl-L-leucyl-N-methyl-L-leucyl-N-methyl-L-valyl-(</td>
<td>Carcinogen</td>
</tr>
<tr>
<td>(3R,4R,6E)-6,7-didehydro-3-hydroxy-N,4-dimethyl-L-2-aminooctanoyl-L-2-aminobutanyl-N-methylglycyl-N-methyl-L-leucyl-L-valyl-N-methylleucyl)</td>
<td></td>
</tr>
</tbody>
</table>

**U.S. State Right-to-Know Regulations**

This product does not contain any substances regulated under applicable state right-to-know regulations

**U.S. FIFRA Label Information**

This product does not contain any substances regulated as pesticides.

**US Commerce Department - Export Administration Regulations Information**

This product does not contain any substances regulated under the Chemical Weapons Convention (CWC).

**U.S. Drug Enforcement Administration Information**

This product does not contain any substances regulated under the DEA.

**SECTION 16. Other information**

**Issuing Date:** 2018-04-09

**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.
End of Safety Data Sheet