1. PRODUCT AND COMPANY IDENTIFICATION

Product name
(±)-Thalidomide, Immunomodulator and anticancer agent

UN/ID No
UN2811

Recommended use
For research use only

Supplier Address
Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address
technical@abcam.com

Emergency telephone
+1 866 928 0789 (Toll free) /+1 202 464 2554

2. HAZARDS IDENTIFICATION

GHS - Classification

<table>
<thead>
<tr>
<th>Hazard Statement</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>Category 3</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>Category 4</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Category 1A</td>
</tr>
</tbody>
</table>

GHS Label elements, including precautionary statements

Signal Word
Danger
Hazard statements
H301 - Toxic if swallowed
H312 - Harmful in contact with skin
H360 - May damage fertility or the unborn child

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves/ eye protection/ face protection
P270 - Do not eat, drink or smoke when using this product
P201 - Obtain special instructions before use
P281 - Use personal protective equipment as required
P202 - Do not handle until all safety precautions have been read and understood
P363 - Wash contaminated clothing before reuse
P264 - Wash face, hands and any exposed skin thoroughly after handling
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician
P312 - Call a POISON CENTER or doctor/ physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

Other information
Caution - substance not yet tested completely

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>Classification (Reg. 1272/2008)</th>
</tr>
</thead>
</table>
| (±)-Thalidomide     | 50-35-1| 60-99    | Repr. 1A (H360)  
Acute Tox. 3 (H301)  
Acute Tox. 4 (H312) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

General advice
When symptoms persist or in all cases of doubt seek medical advice. If symptoms persist, call a physician.

Eye contact
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes.

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Inhalation
Move to fresh air.

Ingestion
Rinse mouth. Do not induce vomiting without medical advice. Consult a physician.

Notes to physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES
Flammable properties  Not flammable.
Flash point  not determined
Suitable extinguishing media  Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**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 to prevent contact with skin and eyes.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Use personal protective equipment. Avoid contact with the skin and the eyes. Avoid dust formation. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Environmental precautions**
Try to prevent the material from entering drains or water courses.

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Use personal protective equipment. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically and collect in suitable container for disposal. Avoid dust formation. Clean contaminated surface thoroughly.

**Other information**
Refer to protective measures listed in sections 7 and 8.

### 7. HANDLING AND STORAGE

**Advice on safe handling**
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Do not breathe vapors or spray mist.

**Technical measures/Storage conditions**
Keep out of the reach of children. Keep container tightly closed in a dry and well-ventilated place.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering measures
- Showers
- Eyewash stations
- Ventilation systems

Personal protective equipment

<table>
<thead>
<tr>
<th>Eye/face protection</th>
<th>Tightly fitting safety goggles.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin and body protection</td>
<td>Long sleeved clothing. Protective gloves.</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
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. Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feeding stuffs.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Appearance</th>
<th>White.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>No information available</td>
</tr>
<tr>
<td>Physical State @20°C</td>
<td>Solid</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability Limits in Air</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>solubility</td>
<td>Dimethylsulfoxide.</td>
</tr>
<tr>
<td>Vapor Pressure @20°C (kPa)</td>
<td>No information available</td>
</tr>
<tr>
<td>VOC Content(%)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability
Stable under recommended storage conditions.

Incompatible products
None known based on information supplied.

Conditions to avoid
None known based on information supplied.

Hazardous decomposition products

Hazardous polymerization
Hazardous polymerization does not occur.
11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information

Product is toxic by ingestion Product is harmful by skin contact

Skin contact

Harmful in contact with skin

Ingestion

Toxic if swallowed

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(±)-Thalidomide</td>
<td>113 mg/kg (Rat)</td>
<td>1,550 mg/kg (Rat)</td>
<td></td>
</tr>
</tbody>
</table>

Chronic toxicity

Reproductive toxicity

Contains a known or suspected reproductive toxin Product is or contains a chemical which is a known or suspected reproductive hazard

Developmental Toxicity

Component substance is listed on California Proposition 65 as a developmental hazard Possible risk of harm to the unborn child May cause birth defects Contains ingredients that have suspected developmental hazards

Teratogenicity

May cause harm to the unborn child

Target Organ Effects

None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Dispose of in accordance with federal, state, and local regulations.

Contaminated packaging

Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT

Proper shipping name

Toxic solid, organic, n.o.s. (±)-Thalidomide

Hazard class

6.1

UN/ID No

UN2811

Packing group

III

IATA

Proper shipping name

Toxic solid, organic, n.o.s. (±)-Thalidomide

Hazard class

6.1

UN/ID No

UN2811

Packing group

III
15. REGULATORY INFORMATION

U.S. Federal Regulations

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></th>
<th>Acute Health Hazard</th>
<th>Chronic Health Hazard</th>
<th>Fire Hazard</th>
<th>Sudden Release of Pressure Hazard</th>
<th>Reactive Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>(±)-Thalidomide</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</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.

U.S. State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>California Prop. 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>(±)-Thalidomide</td>
<td>50-35-1</td>
<td>Developmental</td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>(±)-Thalidomide</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

International Regulations

WHMIS Note: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.
16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3
H360 - May damage fertility or the unborn child H301 - Toxic if swallowed H312 - Harmful in contact with skin

Hazard statements
H301 - Toxic if swallowed
H312 - Harmful in contact with skin
H360 - May damage fertility or the unborn child

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 MSDS