MATERIAL SAFETY DATA SHEET
Cat# 2020-10, -(z)-Thalidomide

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: (z)-Thalidomide
PRODUCT CODES: Cat# 2020-10, -50
MANUFACTURER: BioVision, Inc.
ADDRESS: 155 S. Milpitas Boulevard, Milpitas, CA 95035
EMERGENCY PHONE: 858-373-8066
CHEMTREC PHONE: 408-493-1800
OTHER CALLS: 408-493-1801
FAX PHONE: 408-493-1801

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Volume</th>
<th>Safety Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>(±)-Thalidomide</td>
<td>Solid</td>
<td>2020: 10 mg</td>
<td>See below</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2020-50: 50 mg</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name/Chemical Name</th>
<th>CAS Number</th>
<th>EC-No.</th>
<th>MW</th>
<th>Chemical Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>(±)-Thalidomide</td>
<td>50-35-1</td>
<td>200-031-1</td>
<td>258.23</td>
<td>C10H13N2O4</td>
</tr>
</tbody>
</table>

(±)-Thalidomide:
Emergency Overview
OSHA Hazards: Toxic by ingestion, Harmful by skin absorption, Teratogen, Reproductive hazard
GHS Classification: 
   - Acute toxicity, Oral (Category 3)
   - Acute toxicity, Dermal (Category 4)
   - Reproductive toxicity (Category 2)

GHS Label elements, including precautionary statements
Pictogram:

Signal word: Danger
Hazard statement(s):
   - H301 Toxic if swallowed.
   - H312 Harmful in contact with skin.
   - H361 Suspected of damaging fertility or the unborn child.
Precautionary statement(s):
   - P281 Use personal protective equipment as required.
   - P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
   - P302+P352 IF ON SKIN: Wash with plenty of soap and water.
   - P321 Specific treatment (see on this label).
   - P338+P313 IF exposed or concerned: Get medical advice/attention.
   - P405 Store locked up.
   - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

HMIS Classification
   - Health hazard: 2
   - Chronic health hazard: *
   - Flammability: 0
   - Physical hazards: 0

NFPA Rating
   - Health Hazard: 2
   - Fire: 0
   - Reactivity Hazard: 0

Potential Health Effects
   - Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
   - Skin: Harmful if absorbed through skin. May cause skin irritation.
   - Eyes: May cause eye irritation.
   - Ingestion: Toxic if swallowed.

SECTION 4: FIRST AID MEASURES

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash off with soap and plenty of water. Take victim immediately to hospital. Consult with a physician.
In case of eye contact: Flush eyes with water as a precaution. If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5: FIRE-FIGHTING MEASURES

Condition of flammability: Not flammable or combustible.
Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.
Hazardous combustion products: Hazardous decomposition products formed under fire conditions—none.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods for cleaning up: Pick up and arrange disposal without creating disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.
Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: -20 °C

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.
Personal protective equipment
Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Eye protection
Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>(±)-Thalidomide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td>White solid</td>
</tr>
<tr>
<td>pH:</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility:</td>
<td>No data available</td>
</tr>
<tr>
<td>Other Solubility:</td>
<td>DMSO (5 mg/ml)</td>
</tr>
<tr>
<td>Specific Gravity (g/ml):</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point (°C):</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point (°C):</td>
<td>239-241 °C (462-466 °F)</td>
</tr>
<tr>
<td>Flash Point (°C):</td>
<td>No data available</td>
</tr>
<tr>
<td>Ignition Temperature (°C):</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>(±)-Thalidomide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Stable under recommended storage conditions</td>
</tr>
<tr>
<td>Conditions to avoid:</td>
<td>No data available</td>
</tr>
</tbody>
</table>
SECTION 11: TOXICOLOGICAL INFORMATION

(±)-Thalidomide:
Acute toxicity:
LD50 Oral – rat – 113 mg/kg
LD50 dermal – rat – 1,550 mg/kg
Skin corrosion/irritation: no data available
Serious eye damage/eye irritation: no data available
Respiratory or skin sensitization: no data available
Germ cell mutagenicity: May alter genetic material.
Carcinogenicity:
- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen IARC.
- ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.
Teratogenicity: May cause congenital malformation in the fetus.
Suspected reproductive toxicant.
Specific target organ toxicity – single exposure (GHS): no data available
Specific target organ toxicity – repeated exposure (GHS): no data available
Aspiration hazard: no data available
Potential Health Effects
- Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
- Skin: Harmful if absorbed through skin. May cause skin irritation.
- Eyes: May cause eye irritation.
- Ingestion: Toxic if swallowed.
Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Synergistic Effects: no data available
Additional information: RTECS: TI4375000

SECTION 12: ECOLOGICAL INFORMATION

(±)-Thalidomide:
Persistence and degradability: no data available
Toxicity: no data available
Bioaccumulative potential: no data available
Mobility in soil: no data available
PBT and vPvB assessment: no data available
Other adverse effects: no data available

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

(±)-Thalidomide:
DOT (US): UN-number: 2811, Class: 6.1, Packing group: III; Proper shipping name: Toxic solids, organic, n.o.s. [(±)-Thalidomide]; Marine pollutant: No; Poison Inhalation Hazard: No
IMDG: UN-number: 2811, Class: 6.1, Packing group: III; EMS-No: F-A, S-A; Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. [(±)-Thalidomide]; Marine pollutant: No
IATA: UN-number: 2811, Class: 6.1, Packing group: III; Proper shipping name: Toxic solid, organic, n.o.s. [(±)-Thalidomide]

SECTION 15: REGULATORY INFORMATION

(±)-Thalidomide:
OSHA Hazards: Toxic by ingestion, Harmful by skin absorption, Teratogen, Reproductive hazard
SARA 302 Components: SARA 302: No chemical in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title II, Section 313.
SARA 311/312 Hazards: Acute Health Hazard, Chronic Health Hazard
Massachusetts Right To Know Components: (±)-Thalidomide, CAS-No. 50-35-1; Revision Date: 1993-04-24
Pennsylvania Right To Know Components: (±)-Thalidomide, CAS-No. 50-35-1; Revision Date: 1993-04-24
New Jersey Right To Know Components: (±)-Thalidomide, CAS-No. 50-35-1; Revision Date: 1993-04-24
California Prop. 65 Components: WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm: (±)-Thalidomide, CAS-No. 50-35-1; Revision Date: 2007-09-28

EU regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Risk Phrases</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>(±)-Thalidomide</td>
<td>R21, R25, R61, R62</td>
<td>S22, S24/25, S36/37/39</td>
</tr>
</tbody>
</table>

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:
PREPARATION INFORMATION:
DISCLAIMER:
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. BioVision, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.