SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: EZSolution™ CHIR99021
PRODUCT CODES: Cat# 1748-5
MANUFACTURER: BioVision, Inc.
ADDRESS: 155 S. Milpitas Boulevard, Milpitas, CA 95035
EMERGENCY PHONE: 858-373-8066
CHEMTREC PHONE: 408-493-1800
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>CHIR99021</td>
<td>10 mM solution in DMSO (5 mg in 1075 µl)</td>
<td>5 mg</td>
<td>See below</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>EZSolution™ CHIR99021</td>
<td>252917-06-9</td>
<td>--</td>
<td>465.34</td>
<td>C₂₂H₁₈Cl₂N₈</td>
</tr>
<tr>
<td>DMSO</td>
<td>67-68-5</td>
<td>200-664-3</td>
<td>78.13</td>
<td>C₂H₆OS</td>
</tr>
</tbody>
</table>

CHIR99021:
Emergency Overview
OSHA Hazards: Irritant
GHS Classification:
  - Eye irritation (Category 2A)
  - Skin irritation (Category 2)
  - Specific target organ toxicity – single exposure (Category 3)
  - Reproductive toxicity (Category 2)
  - Acute toxicity, oral (Category 4)

GHS Label elements, including precautionary statements
Pictogram:

Signal word: Warning

Hazard statement(s):
  - H302 Harmful if swallowed.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H335 May cause respiratory irritation.
  - H361 Suspected of damaging fertility or the unborn child.

Precautionary statement(s):
  - P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
  - P263 Avoid contact during pregnancy/while nursing.
  - P264 Wash skin thoroughly after handling.
  - P271 Use only outdoors or in a well-ventilated area.
  - P280 Wear protective gloves/eye protection/face protection.
  - P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
  - P302+P352 IF ON SKIN: Wash with plenty of soap and water.
  - P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P312 Call a POISON CENTER or doctor/physician if you feel unwell.
  - P332+P313 If skin irritation persists: Get medical advice/attention.
  - P337+P313 If eye irritation persists: Get medical advice/attention.

HMIS Classification
  - Health hazard: 2
  - Flammability: 0
  - Physical hazards: 0

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

Potential Health Effects
DMSO:
Emergency Overview
OSHA Hazards: Combustible Liquid, Target Organ Effect
Target Organs: Eyes, Skin
GHS Classification: Flammable liquids (Category 4)
GHS Label elements, including precautionary statements
Pictogram: none
Signal word: Warning
Hazard statement(s): H227 Combustible liquid
Precautionary statement(s): none
HMIS Classification
Health hazard: 0
Chronic Health Hazard: *
Flammability: 2
Physical hazards: 0
NFPA Rating
Health hazard: 0
Fire: 2
Reactivity Hazard: 0

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

Aggravated Medical Condition: Avoid contact w/DMSO solutions containing toxic materials or materials with unknown toxicological properties. DMSO is readily absorbed through skin and may carry such materials into the body.

SECTION 4: FIRST AID MEASURES
General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
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. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5: FIRE-FIGHTING MEASURES
Suitable extinguishing media: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.
Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.
Hazardous combustion products: Hazardous combustion products formed under fire conditions – no data available.
Further information: Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES
Personal precautions: Avoid breathing vapors, mist or gas. Avoid dust formation. Ensure adequate ventilation.
Environmental precautions: Do not let product enter drains.
Methods for cleaning up: Sweep up and keep in suitable, closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: HANDLING AND STORAGE
Precautions for safe handling
Keep away from sources of ignition—no smoking. Take measures to prevent the buildup electrostatic charge.
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
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. 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
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and body protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Hygiene measures
General industrial hygiene practice.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>CHIR99021</th>
<th>DMSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td>Off-white solid</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>pH:</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility:</td>
<td>No data available</td>
<td>Completely miscible</td>
</tr>
<tr>
<td>Other Solubility:</td>
<td>DMSO (100 mM)</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific Gravity (g/ml):</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point (°C):</td>
<td>No data available</td>
<td>189 °C (372 °F)</td>
</tr>
<tr>
<td>Melting Point (°C):</td>
<td>No data available</td>
<td>16-19 °C (61-66 °F)</td>
</tr>
<tr>
<td>Flash Point (°C):</td>
<td>No data available</td>
<td>87 °C (189 °F)</td>
</tr>
<tr>
<td>Ignition Temperature (°C):</td>
<td>No data available</td>
<td>301 °C (574 °F)</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
<td>1.1 g/ml</td>
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</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>CHIR99021</th>
<th>DMSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Stable under recommended storage conditions</td>
<td>Stable under recommended storage conditions</td>
</tr>
<tr>
<td>Conditions to avoid:</td>
<td>No data available</td>
<td>Heat, Flames, Sparks</td>
</tr>
<tr>
<td>Materials to avoid:</td>
<td>Strong oxidizing agents</td>
<td>Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents</td>
</tr>
<tr>
<td>Hazardous decomposition products:</td>
<td>Carbon oxides, nitrogen oxide, halogenated compounds</td>
<td>Carbon oxides, sulfur oxides</td>
</tr>
</tbody>
</table>

SECTION 11: TOXICOLOGICAL INFORMATION

CHIR99021:
Acute toxicity: no data available
Skin corrosion/irritation: no data available
Serious eye damage/eye irritation: no data available
Respiratory or skin sensitization: no data available
Germ cell mutagenicity: no data available
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 by 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 known or anticipated 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: no data available
Teratogenicity: no data available
Specific target organ toxicity – single exposure (GHS): Inhalation – may cause respiratory irritation.
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: May be harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes eye irritation.
Further information on ecology (rainbow trout)

Elimination information (persistence and degradability): no data available

Ecotoxicity effects:
- Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 34,000 mg/l - 96 h; LC50 - Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 h; Toxicity to daphnia and other aquatic invertebrates; EC50 - Daphnia pulex (Water flea) - 27,500 mg/l
- Toxicity to algae EC50 - Lepomis macrochirus (Bluegill) - > 400,000 mg/l - 96 h

Further information on ecology: no data available
SECTION 13: DISPOSAL CONSIDERATIONS

Product: Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

CHIR99021:
DOT (US): Not dangerous goods.
IMDG: Not dangerous goods.
IATA: Not dangerous goods.

DMSO
DOT (US): UN-Number: 1993 Class: CBL Packing group: III; Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide); Marine pollutant: No; Poison Inhalation Hazard: No
IMDG: Not dangerous goods
IATA: Not dangerous goods

SECTION 15: REGULATORY INFORMATION

CHIR99021:
OSHA Hazards: Irritant
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
Massachusetts Right To Know Components: No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right To Know Components: CHIR 99021, CAS-No. 252917-06-9
New Jersey Right To Know Components: CHIR 99021, CAS-No. 252917-06-9
California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

DMSO
OSHA Hazards: Combustible Liquid, Target Organ Effect
DSL Status: All components of this product are on the Canadian DSL list.
SARA 302 Components: SARA 302: No chemicals 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 III, Section 313.
SARA 311/312 Hazards: Fire Hazard, Chronic Health Hazard
Massachusetts Right To Know Components: No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right To Know Components; Dimethyl sulfoxide CAS-No. 67-68-5
New Jersey Right To Know Components: Dimethyl sulfoxide CAS-No. 67-68-5
California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

EU regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Risk Phrases</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIR99021</td>
<td>R22, R38, R41, R62, R63</td>
<td>S22, S24/25, S26, S28, S36/37/39</td>
</tr>
<tr>
<td>DMSO</td>
<td>R10, R36/37/38</td>
<td>S24/25, S36/37/39, S45</td>
</tr>
</tbody>
</table>

SECTION 16: OTHER 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.