Section 1 - Product and Company Information

Product Name: Concanaevilin A, from Cananaria ensiformis (Jack Bean), type VI
Product Number: L7647
Brand: Sigma Chemical
Company: Sigma-Aldrich
Street Address: 3001 Spruces Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 314-771-5765
Fax: 600 328 5025

Emergency Phone: 414 273 3650 Ext. 5596

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
<th>EC No</th>
<th>Annex I Index</th>
</tr>
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<tbody>
<tr>
<td>CONCANAVAILIN A</td>
<td>11028-71-0</td>
<td>No</td>
<td>234-258-2</td>
<td></td>
</tr>
</tbody>
</table>

Formula: Synonyms:

Section 3 - Hazards Identification

Emergency Overview:
Harmful. May cause sensitization by inhalation and skin contact.

Hazard Rating:
- Health: 3
- Reactivity: 0

NFPA Rating:
- Flammability: 0
- Reactivity: 0

*Additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure:
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure:
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

Dermal Exposure:
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Extinguishing Media:
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting:
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s):
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s):
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up:
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling:
User Exposure: Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage:
Suitable: Keep tightly closed. Store at -20°C.

Section 8 - Exposure Controls / PPE

Engineering Controls:
Mechanical exhaust required.

Personal Protective Equipment:
Other:
Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

General Hygiene Measures:
Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

Appearance:
Physical State: Solid

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Molecular Weight: N/A
pH: N/A
Resistivity Range: N/A
M.P. / Boiling Point: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Saturated Vapor Conc.: N/A
Sp. Gr./Density: N/A
Bulk Density: N/A
Odor Threshold: N/A
Volatile%: N/A
VOC Content: N/A
Water Content: N/A
Solvent Content: N/A
Evaporation Rate: N/A
Viscosity: N/A
Partition Coefficient: N/A
Decomposition Temp. : N/A
Flash Point °F: N/A
Flash Point °C: N/A
Explosion Limits: N/A
Flammability: N/A
Autoignition Temp: N/A
Sensitivitiy: N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability
Stable, Stable.

Materials to Avoid
Oxidizing agents.

Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide.

Hazardous Polymerization Products
Will not occur.

Section 11 - Toxological Information

Route of Exposure
Skin Contact
May cause skin irritation.
Skin Absorption
May be harmful if absorbed through the skin.
Eye Contact
May cause eye irritation.
Inhalation
May be harmful if inhaled. Material may irritate mucous membranes and upper respiratory tract.

Ingestion
May be harmful if swallowed.

Sensitization
Respiratory
May cause allergic respiratory reaction.
Skin
May cause allergic skin reaction.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number:

Toxicity Data
Intraperitoneal - Mouse: 41500 UG/KG (LD50)
Intravenous - Mouse: 50 MG/KG (LD50)
Remarks: Tumorogenic-Active as anti-cancer agent.

Chronic Exposure - Teratogen

<table>
<thead>
<tr>
<th>Species</th>
<th>Route of Application</th>
<th>Exposure Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>5 MG/KG Intravenous</td>
<td>(80 PREG)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouse</td>
<td>5 MG/KG Intravenous</td>
<td>(7D PREG)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouse</td>
<td>2500 UG/KG Intravenous</td>
<td>(7D PREG)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouse</td>
<td>5 MG/KG Intravenous</td>
<td>(7D PREG)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouse</td>
<td>5 MG/KG Intravenous</td>
<td>(7D PREG)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouse</td>
<td>80 UG/KG Intradermal</td>
<td>(13D PREG)</td>
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</tbody>
</table>

Chronic Exposure - Mutagen

<table>
<thead>
<tr>
<th>Species</th>
<th>Route of Application</th>
<th>Exposition Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouse</td>
<td>400 UG/KG Intravenous</td>
<td>Unscheduled DNA synthesis</td>
</tr>
<tr>
<td></td>
<td>1 MG/L Other cell types</td>
<td>Unscheduled DNA synthesis</td>
</tr>
</tbody>
</table>

Chronic Exposure - Reproductive Hazard

<table>
<thead>
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<th>Species</th>
<th>Route of Application</th>
<th>Exposure Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>20 MG/KG Intravenous</td>
<td>(80 PREG)</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8D PREG)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5D PREG)</td>
</tr>
</tbody>
</table>

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Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation
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.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA
Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU Additional Classification
Symbol of Danger: Xi
Indication of Danger: Harmful.
Risk Statements: R: 42/45
May cause sensitization by inhalation and skin contact.
Safety Statements: S: 24/25 36
Avoid contact with skin and eyes. Wear suitable protective clothing.

US Classification and Label Text
Indication of Danger: Harmful.
Risk Statements: May cause sensitization by inhalation and skin contact.
Safety Statements: Avoid contact with skin and eyes. Wear suitable protective clothing.

United States Regulatory Information
SARA Listed: No

Canada Regulatory Information
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: No
NDSSL: No

Section 16 - Other Information

Disclaimer
For R&D use only. Not for drug, household or other uses.