# Material Safety Data Sheet

## Section 1. Chemical Product and Company Identification

### Common Name/Trade Name
Ouabain, octahydrate

### Manufacturer
SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

### Commercial Name(s)
Not available.

### Synonym
Acocantherin; Astrobain; Gratibain; Ouabegenin L-rhamnoside, octahydrate; Ouabaine, octahydrate; Purostrophan; Strophoperm; Card-20(22)-enolide, 3-[(6-deoxy-alpha-L-mannopyranosyl)oxy]-1,5,11,14,19-pentahydroxy-(1 beta,3 beta, 5 beta, 11 alpha)-, octahydrate

### Chemical Name
Not available.

### Chemical Family
Not available.

### Chemical Formula
C29-H44-O12.8H2O

### Supplier
SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

### Catalog Number(s)
O3291

### RTECS
RN3850000

### TSCA
TSCA 8(b) inventory: No products were found.

### CI#
Not available.

### NFPA
Health Hazard 2
Fire Hazard 1
Reactivity 0

### HMIS

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Fire Hazard</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### IN CASE OF EMERGENCY
CHEMTREC (24hr) 800-424-9300

### CALL
(310) 516-8000

## Section 2. Composition and Information on Ingredients

### Exposure Limits

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Ouabain, octahydrate</td>
<td>11018-89-6; 630-60-4(CAS no. for anhydrous form)</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

### Toxicological Data on Ingredients
- **Ouabain, octahydrate**
  - LD50: Not available.
  - LC50: Not available.

*Continued on Next Page*
### Section 3. Hazards Identification

<table>
<thead>
<tr>
<th>Potential Acute Health Effects</th>
<th>Very hazardous in case of ingestion. Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant). Severe over-exposure can result in death.</th>
</tr>
</thead>
</table>
| Potential Chronic Health Effects | CARCINOGENIC EFFECTS: Not available.  
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells.  
TERATOGENIC EFFECTS: Not available.  
DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to heart, cardiovascular system. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs. |

### Section 4. First Aid Measures

<table>
<thead>
<tr>
<th>Eye Contact</th>
<th>Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Contact</td>
<td>Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.</td>
</tr>
<tr>
<td>Serious Skin Contact</td>
<td>Not available.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.</td>
</tr>
<tr>
<td>Serious Inhalation</td>
<td>Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.</td>
</tr>
<tr>
<td>Serious Ingestion</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### Section 5. Fire and Explosion Data

<table>
<thead>
<tr>
<th>Flammability of the Product</th>
<th>May be combustible at high temperature.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-Ignition Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash Points</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammable Limits</td>
<td>Not available.</td>
</tr>
<tr>
<td>Products of Combustion</td>
<td>These products are carbon oxides (CO, CO2).</td>
</tr>
<tr>
<td>Fire Hazards in Presence of Various Substances</td>
<td>Slightly flammable to flammable in presence of heat.</td>
</tr>
</tbody>
</table>
| Explosion Hazards in Presence of Various Substances | Risks of explosion of the product in presence of mechanical impact: Not available.  
Risks of explosion of the product in presence of static discharge: Not available. |
| Fire Fighting Media and Instructions | SMALL FIRE: Use DRY chemical powder.  
LARGE FIRE: Use water spray, fog or foam. Do not use water jet. |
| Special Remarks on Fire Hazards | As with most organic solids, fire is possible at elevated temperatures |
| Special Remarks on Explosion Hazards | Not available. |

**Continued on Next Page**
Section 6. Accidental Release Measures

Small Spill

Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill

Poisonous solid.

Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

Section 7. Handling and Storage

Precautions

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

Storage

Keep container tightly closed. Keep container in a cool, well-ventilated area. Sensitive to light. Store in light-resistant containers.

Section 8. Exposure Controls/Personal Protection

Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection

Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits

Not available.

Section 9. Physical and Chemical Properties

Physical state and appearance

Solid. (Crystalline powder.)

Molecular Weight

728.8 g/mole

pH (1% soln/water)

Not available.

Boiling Point

Not available.

Melting Point

260°C (500°F)

Critical Temperature

Not available.

Specific Gravity

Not available.

Vapor Pressure

Not applicable.

Vapor Density

Not available.

Volutility

Not available.

Odor Threshold

Not available.

Water/Oil Dist. Coeff.

Not available.

Ionicity (in Water)

Not available.

Dispersion Properties

Not available.

Solubility

Sparingly soluble in cold water. Sparingly soluble in dehydrated alcohol. Practically insoluble in ethyl acetate.

Continued on Next Page
Section 10. Stability and Reactivity Data

<table>
<thead>
<tr>
<th>Stability</th>
<th>The product is stable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instability Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Conditions of Instability</td>
<td>Excess heat, incompatible materials, dust generation, light</td>
</tr>
<tr>
<td>Incompatibility with various substances</td>
<td>Reactive with oxidizing agents, acids, alkalis.</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Special Remarks on Reactivity</td>
<td>Sensitive to light.</td>
</tr>
<tr>
<td>Special Remarks on Corrosivity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Polymerization</td>
<td>Will not occur.</td>
</tr>
</tbody>
</table>

Section 11. Toxicological Information

<table>
<thead>
<tr>
<th>Routes of Entry</th>
<th>Inhalation. Ingestion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to Animals</td>
<td>LD50: Not available.</td>
</tr>
<tr>
<td>Chronic Effects on Humans</td>
<td>MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. May cause damage to the following organs: heart, cardiovascular system.</td>
</tr>
<tr>
<td>Other Toxic Effects on Humans</td>
<td>Very hazardous in case of ingestion. Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant).</td>
</tr>
<tr>
<td>Special Remarks on Toxicity to Animals</td>
<td>The estimated lethal dose in humans is 10 to 20 mg for a 70 kg (150-pound) person (EPA, 1985). No actual oral LD50 information for humans or rats has been found.</td>
</tr>
<tr>
<td>Special Remarks on Chronic Effects on Humans</td>
<td>May affect genetic material (mutagenic)</td>
</tr>
<tr>
<td>Special Remarks on other Toxic Effects on Humans</td>
<td>Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: May cause eye irritation. Inhalation: May cause respiratory tract irritation. May cause methemoglobinemia, cyanosis (bluish discoloration of the skin due to deficient oxygenation of blood), blood changes, convulsions, cardiac abnormalities, tachycardia, dyspnea, (difficult breathing), Central Nervous System (CNS) nervous system effects and death. Ingestion: Toxic. Harmful if swallowed. Causes nausea, vomiting, anorexia. May cause fluid-electrolyte imbalance elevation in serum potassium levels (hyperkalemia), metabolic alkalosis. Can cause Central Nervous System (CNS).nervous system effects (depression, headache, weakness, paresthesia, confusion, emotional instability, confusion, memory loss, hallucinations, somnolence, disorientation delirium, seizures, drowsiness), blood abnormalities (thrombocytopenia, agranulocytosis, aplastic anemia), cardiac effects (heart blocks, sinus bradycardia, nodal tachycardia, atrial tachycardia, arrhythmias, hypotension), convulsions, shock, and death due to cardiovascular collapse. May cause liver and kidney damage. May cause methemoglobinemia, cyanosis (bluish discoloration of the skin due to deficient oxygenation of blood). Chronic Potential Health Effects: Chronic exposure to low levels of Ouabain may result in cumulative toxicity because of its long half-life. Chronic exposure appears to result in signs and symptoms similar to, but more pronounced than, those found with acute exposure. Nausea, vomiting, and weight loss can occur. Neuropsychiatric (behavioral/cenral nervous system) effects of chronic exposure include headache, fatigue, irritability malaise, lassitude, lethargy, sudden personality changes, confusion, paranoia, hallucinations, psychosis. Allergic reactions have occasionally been reported. Oubain is a cardiac glycoside. Chronic exposure to cardiac glycoside compounds may also cause visual disturbances.</td>
</tr>
</tbody>
</table>

Continued on Next Page
Section 12. Ecological Information

Ecotoxicity
Not available.

BOD5 and COD
Not available.

Products of Biodegradation
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation
The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation
Not available.

Section 13. Disposal Considerations

Waste Disposal
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification
CLASS 6.1: Poisonous material.

Identification
: Alkaloid, solid, n.o.s(Ouabain)  UNNA: 1544  PG: III

Special Provisions for Transport
Not available.

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations
Illinois chemical safety act: Listed as Ouabain (CAS no. 630-60-4)
New York release reporting list: Listed as Ouabain (CAS no. 630-60-4)
Pennsylvania RTK: Listed as Ouabain (CAS no. 630-60-4)
Massachusetts RTK: Listed as Ouabain (CAS no. 630-60-4)
Massachusetts spill list: Listed as Ouabain (CAS no. 630-60-4)
New Jersey: Listed as Ouabain (CAS no. 630-60-4)
New Jersey spill list: Ouabain (CAS no. 630-60-4)
Louisiana RTK reporting list: Listed as Ouabain (CAS no. 630-60-4)
SARA 302/304/311/312 extremely hazardous substances: Ouabain
CERCLA: Hazardous substances.: Ouabain: 100 lbs. (45.36 kg)
TSCA 8(b) Inventory: Ouabain, octahydrate (CAS no. 11018-89-6) is not listed in TSCA 8(b) inventory since it is a hydrate. However Ouabain, anhydrous (CAS no. 630-60-4) is listed on TSCA 8(b) Inventory.

California Proposition 65 Warnings
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations
Ouabain, octahydrate (CAS no. 11018-89-6) is not listed on the European EINECS Inventory or any other international inventory or list.
Ouabain (CAS no. 630-60-4) is listed on the following:
European EINECS Inventory (EINECS no. 211-139-3)
Canada: Non-domestic Substance List(NDSL)
China: National Inventory

Other Classifications
WHMIS (Canada) CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).

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**Ouabain, octahydrate**

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Fire Hazard</th>
<th>Reactivity</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
<td>E</td>
</tr>
</tbody>
</table>

**National Fire Protection Association (U.S.A.)**

- **Flammability**: 1
- **Reactivity**: 0
- **Specific hazard**: None

**Protective Equipment**

- **Gloves.**
- **Lab coat.**
- **Dust respirator.** Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
- **Safety glasses.**

**Emergency Measures**

- **R23/25-** Toxic by inhalation and if swallowed.
- **R33-** Danger of cumulative effects.

- **S45-** In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**Hazardous Materials Information System (HMIS) (U.S.A.)**

- **Health**: 2
- **Flammability**: 0
- **Reactivity**: 0

**Health Hazard**

- **Health**: 2

**Exploded View**

- **Health Hazard**
- **Flammability**
- **Reactivity**

**Specific Hazard**

- **Health**: 2

**Gloves.**

**Lab coat.**

- **Dust respirator.** Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

**Safety glasses.**
### Section 16. Other Information

<table>
<thead>
<tr>
<th><strong>MSDS Code</strong></th>
<th>O0062</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>References</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Other Special Considerations</strong></td>
<td>Use: Cardiac drug. It is a cardiac glycoside.</td>
</tr>
</tbody>
</table>

Verified by Sonia Owen.  
Printed 9/12/2006.

CALL (310) 516-8000

**Notice to Reader**

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.