1. PRODUCT AND COMPANY IDENTIFICATION

Product name
Ondansetron hydrochloride dihydrate

UN/ID No
2811

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
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free) - Monday-Friday 8am-9pm EST

2. HAZARDS IDENTIFICATION

GHS - Classification

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>Category 3</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Category 1</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

GHS Label elements, including precautionary statements

Signal Word
Danger

Hazard statements
H301 - Toxic if swallowed
H318 - Causes serious eye damage
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
Precautionary Statements - EU (§28, 1272/2008)
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P280 - Wear protective gloves/eye protection/face protection
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P330 - Rinse mouth
P273 - Avoid release to the environment
P391 - Collect spillage
P501 - Dispose of contents/container to an approved waste disposal plant
P405 - Store locked up

Other information
Caution - substance not yet tested completely

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

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

4. FIRST AID MEASURES

General advice
Immediate medical attention is required.

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

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

 Inhalation
Move to fresh air.

Ingestion
Rinse mouth. Do not induce vomiting without medical advice. If symptoms persist, call 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.
### 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 | Prevent further leakage or spillage if safe to do so. 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 | Cover liquid spill with sand, earth or other noncombustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Sweep up and shovel into suitable containers for disposal. Soak up with inert absorbent material. Dam up. Pick up and transfer to properly labeled containers. |
| 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. Avoid dust formation. Use only in area provided with appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. |
| Technical measures/Storage conditions | Keep out of the reach of children. Keep in properly labeled containers. Keep containers tightly closed in a dry, cool 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 |  
**Eye/face protection**  
Tightly fitting safety goggles. Face-shield.  
No special protective equipment required.  
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. |
| **Skin and body protection** |  |
| **Respiratory protection** |  |
| 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>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White.</td>
</tr>
<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>Explosion limits</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific Gravity solubility</td>
<td>no data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Ethanol, Dimethylsulfoxide.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>no data available</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>Physical State @20°C</td>
<td>Solid</td>
</tr>
<tr>
<td>Water Solubility VALUE</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Evaporation rate</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. Corrosive to skin, eyes and/or respiratory tract.

Eye contact
Causes burns

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>Ondansetron hydrochloride dihydrate</td>
<td>94.8 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chronic toxicity
Avoid repeated exposure

Target Organ Effects
None known.
12. ECOLOGICAL INFORMATION

Ecotoxicity
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicity to algae</th>
<th>Toxicity to fish</th>
<th>Toxicity to microorganisms</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ondansetron hydrochloride dihydrate</td>
<td>IC50 (Static)</td>
<td>EC50 (Static)</td>
<td>IC50 (Static)</td>
<td>EC50 (Static) Daphnia pulex (Water flea):</td>
</tr>
<tr>
<td></td>
<td>Selenastrum capricornutum (Green algae): 0.87 mg/l (72 h)</td>
<td>Oncorhynchus mykiss (Rainbow trout): 6.5 mg/l (96 h)</td>
<td>Activated sludge (Other microorganisms): &gt; 1,000 mg/l (3 h)</td>
<td>28 mg/l (48 h)</td>
</tr>
<tr>
<td></td>
<td>NOEL (Measured)</td>
<td>NOEC (Measured)</td>
<td></td>
<td>NOEC (Static) Daphnia pulex (Water flea):</td>
</tr>
<tr>
<td></td>
<td>Selenastrum capricornutum (Green algae): 0.31 mg/l (72 h)</td>
<td>Oncorhynchus mykiss (Rainbow trout): 2.6 mg/l (96 h)</td>
<td></td>
<td>16 mg/l (48 h)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Chronic EC50 (Static renewal) Ceriodaphnia dubia (Water flea): 1.4 mg/l (8 d)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Chronic LOEC (Static renewal) Ceriodaphnia dubia (Water flea): 1 mg/l (8 d)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Chronic NOEC (Static renewal) Ceriodaphnia dubia (Water flea): 0.32 mg/l (8 d)</td>
</tr>
</tbody>
</table>

Persistence and degradability  Not readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods  Dispose of in accordance with local regulations.

Contaminated packaging  Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT
Proper shipping name  Toxic solid, organic, n.o.s. (Ondansetron hydrochloride dihydrate)
Hazard class  6.1
UN/ID No  2811
Packing group  III

IATA
Proper shipping name  Toxic solid, organic, n.o.s. (Ondansetron hydrochloride dihydrate)
UN/ID No  2811
Hazard class  6.1
Packing group  III

ADR
Proper shipping name  Toxic solid, organic, n.o.s. (Ondansetron hydrochloride dihydrate)
Hazard class  6.1
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>Hazard Category</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td>yes</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>no</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>no</td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>no</td>
</tr>
<tr>
<td>Reactive Hazard</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 does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

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
H301 - Toxic if swallowed H318 - Causes serious eye damage H400 - Very toxic to aquatic life H410 - Very toxic to aquatic life with long lasting effects

Hazard statements
H301 - Toxic if swallowed
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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