1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Hydralazine hydrochloride

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>Skin corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Specific target organ systemic toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

GHS Label elements, including precautionary statements

Signal Word
Danger

Hazard statements
H301 - Toxic if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
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
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/ attention
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P260 - 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
P271 - Use only outdoors or in a well-ventilated area
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P330 - Rinse mouth
P501 - Dispose of contents/ container to an approved waste disposal plant
P405 - Store locked up
P362 - Take off contaminated clothing and wash before reuse

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
When symptoms persist or in all cases of doubt seek medical advice.

Eye contact
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If symptoms persist, call a physician.

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Inhalation
Move to fresh air. If symptoms persist, call a physician.

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.
Sensitivity to Static Discharge | none.

Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions | Use personal protective equipment. Avoid contact with the skin and the eyes. Avoid dust formation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions | Try to prevent the material from entering drains or water courses.

Methods for containment | Prevent further leakage or spillage if safe to do so.

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. Pick up and transfer to properly labeled containers. Soak up with inert absorbent material. Dam up.

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. 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 containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep in properly labeled containers.

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.

Skin and body protection | No special protective equipment required.

Respiratory protection | 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.

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.
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Physical State @20°C</th>
<th>Odor</th>
<th>Water Solubility VALUE</th>
<th>Evaporation rate</th>
<th>VOC Content(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
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<td>Solid</td>
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<td>Soluble in water</td>
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<tr>
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<tr>
<td>Vapor density</td>
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<tr>
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</tr>
<tr>
<td>Decomposition temperature</td>
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<tr>
<td>Melting point/range</td>
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<tr>
<td>Vapor density</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></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 polymerization            | Hazardous polymerization does not occur.    |

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information                  | Product is harmful by ingestion. Irritating to skin, eyes and / or respiratory tract. |
Inhalation                           | May cause irritation of respiratory tract  |
Eye contact                          | May cause irritation                       |
Skin contact                         | May cause irritation                       |
Ingestion                            | Harmful if swallowed Ingestion may cause irritation to mucous membranes |

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
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<tbody>
<tr>
<td>Hydralazine hydrochloride</td>
<td>280 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chronic toxicity

Chronic toxicity                   | Avoid repeated exposure                     |
Target Organ Effects               | None known.                                 |

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.
## 13. DISPOSAL CONSIDERATIONS

### Waste disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

### Contaminated packaging

Do not re-use empty containers.

## 14. TRANSPORT INFORMATION

### DOT

<table>
<thead>
<tr>
<th>Proper shipping name</th>
<th>Excepted Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic solid, organic, n.o.s. (Hydralazine hydrochloride)</td>
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</tr>
<tr>
<td>Hazard class</td>
<td>6.1</td>
</tr>
<tr>
<td>UN/ID No</td>
<td>2811</td>
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<tr>
<td>Packing group</td>
<td>III</td>
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</table>

### IATA

<table>
<thead>
<tr>
<th>UN/ID No</th>
<th>2811</th>
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<tr>
<td>Proper shipping name</td>
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</table>

### ADR

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<thead>
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<tbody>
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<td>Toxic solid, organic, n.o.s. (Hydralazine hydrochloride)</td>
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</table>

## 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 H315 - Causes skin irritation H319 - Causes serious eye irritation H335 - May cause respiratory irritation

Hazard statements
H301 - Toxic if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

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