Section 1 - Product and Company Information

Product Name                  O-(2,3,4,5,6-PENTAFLUOROBENZYL) HYDROXYLAMINE HYDROCHLORIDE
Product Number                P4190
Brand                         SIGMA
Company                       Sigma-Aldrich Canada, Ltd
Address                       2149 Winston Park Drive
                             Oakville ON L6H 6J8 CA
Technical Phone:              9058299500
Fax:                          9058299292
Emergency Phone:             800-424-9300

Section 2 - Composition/Information on Ingredient

Substance Name                O-(2,3,4,5,6-PENTAFLUOROBENZYL)HYDROXYLAMINE HYDROCHLORIDE
CAS #                        57981-02-9
SARA 313                     No
Formula                      C7H4F5NO·HCl

Section 3 - Hazards Identification

HMIS RATING
    HEALTH: 0
    FLAMMABILITY: 0
    REACTIVITY: 0

NFPA RATING
    HEALTH: 0
    FLAMMABILITY: 0
    REACTIVITY: 0

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 not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
    In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
    In case of contact, immediately flush eyes with copious amounts
of water for at least 15 minutes.

---

**Section 5 - Fire Fighting Measures**

**FLASH POINT**
N/A

**AUTOIGNITION TEMP**
N/A

**FLAMMABILITY**
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 inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

**STORAGE**
Suitable: Keep tightly closed. Store in a cool dry place.

---

**Section 8 - Exposure Controls / PPE**

**ENGINEERING CONTROLS**
Safety shower and eye bath. Mechanical exhaust required.

**PERSONAL PROTECTIVE EQUIPMENT**
Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 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. Hand: Protective gloves. Eye: Chemical safety goggles.

**GENERAL HYGIENE MEASURES**
Wash thoroughly after handling. Wash contaminated clothing before reuse.

---

**Section 9 - Physical/Chemical Properties**
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>249.57 AMU</td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
</tr>
<tr>
<td>BP/BP Range</td>
<td>N/A</td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>227 °C</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Saturated Vapor Conc.</td>
<td>N/A</td>
</tr>
<tr>
<td>SG/Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>N/A</td>
</tr>
<tr>
<td>Volatile%</td>
<td>N/A</td>
</tr>
<tr>
<td>VOC Content</td>
<td>N/A</td>
</tr>
<tr>
<td>Water Content</td>
<td>N/A</td>
</tr>
<tr>
<td>Solvent Content</td>
<td>N/A</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>N/A</td>
</tr>
<tr>
<td>Viscosity</td>
<td>N/A</td>
</tr>
<tr>
<td>Surface Tension</td>
<td>N/A</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>N/A</td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>N/A</td>
</tr>
<tr>
<td>Flash Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>N/A</td>
</tr>
<tr>
<td>Flammability</td>
<td>N/A</td>
</tr>
<tr>
<td>Autoignition Temp</td>
<td>N/A</td>
</tr>
<tr>
<td>Refractive Index</td>
<td>N/A</td>
</tr>
<tr>
<td>Optical Rotation</td>
<td>N/A</td>
</tr>
<tr>
<td>Miscellaneous Data</td>
<td>N/A</td>
</tr>
<tr>
<td>Solubility</td>
<td>N/A</td>
</tr>
<tr>
<td>N/A = not available</td>
<td></td>
</tr>
</tbody>
</table>

Section 10 - Stability and Reactivity

**STABILITY**
- Materials to Avoid: Strong oxidizing agents.

**HAZARDOUS DECOMPOSITION PRODUCTS**

**HAZARDOUS POLYMERIZATION**
- Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

**ROUTE OF EXPOSURE**
- Skin Contact: May cause skin irritation.
- Eye Contact: May cause eye irritation.
- Multiple Routes: May be harmful by inhalation, ingestion, or skin absorption.

**SIGNS AND SYMPTOMS OF EXPOSURE**
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Section 12 - Ecological Information

No data available.
Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
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
S: 22-24/25
Safety Statements: Do not breathe dust. Avoid contact with skin and eyes.

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
NDSL: No

Section 16 - Other Information

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

WARRANTY
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. Sigma-Aldrich 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. Copyright 2009 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.