Section 1 - Product and Company Information

Product Name                      3,4-DIHYDROXYPHENYLACETIC ACID, 98%
Product Number                    850217
Brand                              ALDRICH
Company                            Sigma-Aldrich Canada, Ltd
Street Address                     2149 Winston Park Drive
City, State, Zip, Country          Oakville ON L6H 6J8 CA
Technical Phone:                   9058299500
Emergency Phone:                   800-424-9300
Fax:                               9058299292

Section 2 - Composition/Information on Ingredient

Substance Name                          CAS #                 SARA 313
3,4-DIHYDROXYPHENYLACETIC ACID          102-32-9              No

Formula         C8H8O4
Synonyms        BA 2773 * Benzeneacetic acid, 3,4-dihydroxy-
                 (9CI) * 3,4-Dihydroxybenzeneacetic acid *
                 Dihydroxyphenylacetic acid *
                 3,4-Dihydroxy-phenylacetic acid * Dopac *
                 Dopacetic acid * Homoprotocatechuic acid

RTECS Number:   AH0590000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Irritant.
Irritating to eyes, respiratory system and skin.

HMIS RATING
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 1

NFPA RATING
FLAMMABILITY: 0
REACTIVITY: 1

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.

EXPOSURE HAZARD(S)
  Material: Irritant.

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: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
  Suitable: Keep tightly closed. Store in the dark.

Section 8 - Exposure Controls / PPE

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

PERSONAL PROTECTIVE EQUIPMENT
  Respiratory: Government approved respirator.
  Hand: Compatible chemical-resistant gloves.
  Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance
Color: Yellow
Form: Powder

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>168.15 AMU</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>BP/BP Range</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>128 °C</td>
<td></td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Saturated Vapor Conc.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>SG/Density</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Bulk Density</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Volatile%</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>VOC Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Water Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Solvent Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Surface Tension</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Autoignition Temp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Refractive Index</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Optical Rotation</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Data</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.
Conditions to Avoid: Light.
Materials to Avoid: Strong oxidizing agents, Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Route of Exposure
Skin Contact: Causes skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes eye irritation.
Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion: May be harmful if swallowed.
SIGNS AND SYMPTOMS OF EXPOSURE
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CHRONIC EXPOSURE - MUTAGEN

Species: Human Human
Dose: 1 MMOL/L 1 MMOL/L
Cell Type: lymphocyte lymphocyte
Mutation test: DNA inhibition DNA inhibition

Species: Hamster Hamster
Dose: 100 MG/L 100 MG/L
Cell Type: ovary ovary
Mutation test: Cytogenetic analysis Cytogenetic analysis

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: Irritant.
R: 36/37/38
Risk Statements: Irritating to eyes, respiratory system and skin.
S: 26 36
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Irritant.
Risk Statements: Irritating to eyes, respiratory system and skin.
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. 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
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 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.