Section 1 - Product and Company Information

Product Name: FUMARASE FROM PORCINE HEART
Product Number: F1757
Brand: SIGMA
Company: Sigma-Aldrich
Address: 3050 Spruce Street
SAINT LOUIS MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name: FUMARASE FROM CHICKEN HEART
CAS #: 9032-88-6
SARA 313: No

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Caution: Avoid contact and inhalation.

HMIS RATING
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 0

NFPA RATING
HEALTH: 1
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 breathing becomes difficult, call a physician.

DERMAL EXPOSURE
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Water spray.

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 protective equipment.

METHODS FOR CLEANING UP
Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

STORAGE
Store at 2-8°C

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Other: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Physical State: Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property</td>
<td>Value</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>N/A</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>
</tbody>
</table>
Saturated Vapor Conc. N/A 
Bulk Density N/A 
Odor Threshold N/A 
Volatile% N/A 
VOC Content N/A 
Water Content N/A 
Solvent Content N/A 
Evaporation Rate N/A 
Viscosity N/A 
Surface Tension N/A 
Partition Coefficient N/A 
Decomposition Temp. N/A 
Flash Point N/A 
Explosion Limits N/A 
Flammability N/A 
Autoignition Temp N/A 
Refractive Index N/A 
Optical Rotation N/A 
Miscellaneous Data N/A 
Solubility N/A 

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Multiple Routes: May be harmful by inhalation, ingestion, or skin absorption.

SENSITIZATION
Sensitization: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

CONDITIONS AGGRAVATED BY EXPOSURE
The toxicological properties have not been thoroughly investigated.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

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**

**US CLASSIFICATION AND LABEL TEXT**

US Statements: Caution: Avoid contact and inhalation.

**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 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.