Section 1 - Product and Company Information

Product Name: L-PHENYLEPHRINE HYDROCHLORIDE
Product Number: P6126
Brand: SIAL
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

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>(R)-(−)-PHENYLEPHRINE HYDROCHLORIDE</td>
<td>61-76-7</td>
<td>No</td>
</tr>
</tbody>
</table>

Formula: C9H13NO2.ClH
Synonyms:
- Adrianol
- Alcon-efrin
- Almefrin
- Benzenemethanol, 3-hydroxy-alpha-((methylamino)methyl)-, hydrochloride, (-)-
- Biomydrin
- Consdrin hydrochloride
- Efricel
- Emagrin
- Fenilfar
- Fenox
- Histabid
- (−)-alpha-Hydroxy-beta-(methylamino)ethyl-alpha-(3-hydroxybenzene) hydrochloride
- (R)-3-Hydroxy-alpha-((methylamino)methyl)benzenemethanol hydrochloride
- 1-m-Hydroxy-alpha-(methylaminomethyl)benzyl alcohol hydrochloride
- 1-1-(m-Hydroxyphenyl)-2-methyl-aminoethanol hydrochloride
- Idrianol
- Isophrine hydrochloride
- Isophrin hydrochloride
- Lexatol
- meta-Sympatol
- meta-Synephrine hydrochloride
- m-Methylaminobenzanilophenol hydrochloride
- Metroxedrine
- Mydfrin
- NCI-C55641
- Neoxedrine chloride
- Neophryn
- Neosympatol
- Neosynephrine hydrochloride
- Neo-Synephrine 1
- Oftalfrine
- OP-Isophrin
- Phenistan
- Phenylephrine hydrochloride
- D-(−)-Phenylephrine hydrochloride
- Prefrin
- Pyract D
- Pyristan
- Rhinall
- Stanephrin
- Sucraphen
- Synasal
- Synethenate

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic (USA) Harmful (EU).
Harmful if swallowed. Irritating to eyes, respiratory system and skin.
Target organ(s): Cardiovascular system. Brain.

HMIS RATING
HEALTH: 2*  
FLAMMABILITY: 0  
REACTIVITY: 0  

NFPA RATING  
HEALTH: 2  
FLAMMABILITY: 0  
REACTIVITY: 0  

*additional chronic hazards present.

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 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. 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 TO BE FOLLOWED IN CASE OF LEAK OR SPILL  
Evacuate area.

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.

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). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>203.67 AMU</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>BP/BP Range</td>
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<td></td>
</tr>
<tr>
<td>MP/MP Range</td>
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</tr>
<tr>
<td>Freezing Point</td>
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<tr>
<td>Vapor Pressure</td>
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<td></td>
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<tr>
<td>Vapor Density</td>
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<tr>
<td>Saturated Vapor Conc.</td>
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<td></td>
</tr>
<tr>
<td>SG/Density</td>
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<td></td>
</tr>
<tr>
<td>Bulk Density</td>
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<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
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<td></td>
</tr>
<tr>
<td>Volatile%</td>
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<td></td>
</tr>
<tr>
<td>VOC Content</td>
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<td></td>
</tr>
<tr>
<td>Water Content</td>
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<tr>
<td>Solvent Content</td>
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<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
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<tr>
<td>Viscosity</td>
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<tr>
<td>Surface Tension</td>
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</tr>
<tr>
<td>Partition Coefficient</td>
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<tr>
<td>Decomposition Temp.</td>
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<td>Flash Point</td>
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<td>Explosion Limits</td>
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<tr>
<td>Flammability</td>
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<tr>
<td>Autoignition Temp</td>
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<tr>
<td>Refractive Index</td>
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</tbody>
</table>
Optical Rotation  Degree of Rotation: 50 g/l Solvent: H2O
-54 - -45 (+/-2)

Miscellaneous Data  N/A
Solubility  N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.
Materials to Avoid: Acids, Acid chlorides, Acid anhydrides, Oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: Causes skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes eye irritation.
Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.
Ingestion: Harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

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

TOXICITY DATA

Oral
Rat
350 mg/kg
LD50

Intraperitoneal
Rat
17 MG/KG
LD50

Subcutaneous
Rat
27 MG/KG
LD50

Intravenous
Rat
440 UG/KG
LD50
Oral
Mouse
120 mg/kg
LD50

Intraperitoneal
Mouse
89 MG/KG
LD50

Subcutaneous
Mouse
22 MG/KG
LD50

Intravenous
Mouse
1120 UG/KG
LD50
Remarks: Lungs, Thorax, or Respiration: Other changes.
Behavioral: Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration: Dyspnea.

Subcutaneous
Rabbit
22 MG/KG
LD50

Intravenous
Rabbit
500 UG/KG
LD50

Intramuscular
Rabbit
7200 UG/KG
LD50

NTP CARCINOGEN LIST
Rating: No evidence.
Species: Mouse/rat
Route: Feed

CHRONIC EXPOSURE - MUTAGEN
Species: Rat
Dose: 7 MMOL/L
Cell Type: liver
Mutation test: DNA damage

Species: Mouse
Dose: 1500 MG/L
Cell Type: lymphocyte
Mutation test: Mutation in mammalian somatic cells.

Species: Hamster
Dose: 10 MMOL/L
Cell Type: ovary
Mutation test: Cytogenetic analysis
Species: Hamster
Dose: 1500 MG/L
Cell Type: ovary
Mutation test: Sister chromatid exchange

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rabbit
Dose: 15 MG/KG
Route of Application: Subcutaneous
Exposure Time: (22-31D PREG)
Result: Maternal Effects: Parturition. Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

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: Xn
Indication of Danger: Harmful.
R: 22-36/37/38
Risk Statements: Harmful if swallowed. 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: Toxic (USA) Harmful (EU).
Risk Statements: Harmful if swallowed. 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.
US Statements: Target organ(s): Cardiovascular system. Brain.

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: Yes
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 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.