SIGMA-ALDRICH

MATERIAL SAFETY DATA SHEET

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Version 1.4

Section 1 - Product and Company Information

Product Name: MIANSERIN HYDROCHLORIDE
Product Number: M2525
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: MIANSERIN HYDROCHLORIDE
CAS #: 21535-47-7

Formula: C18H20N2 · HCl
Synonyms: Athymil * Bolvidon * GB 94 *
1,2,3,4,10,14b-Hexahydro-2-methyldibenzo(c,f)pyrazino(1,2-a)azepine hydrochloride *
Mianserin hydrochloride * Mianserin hydrochloride * ORG GB 94 * Toluon * Tolvon
RTECS Number: HP8780000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Harmful.
Harmful if swallowed.
Target organ(s): Nerves.

HMIS RATING
HEALTH: 1*
FLAMMABILITY: 0
REACTIVITY: 0

NFPA RATING
HEALTH: 1
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 artifical 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 self-contained breathing apparatus, 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 at 2-8°C

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>Appearance</th>
<th>Physical State: Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property</td>
<td>Value</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>300.8 AMU</td>
</tr>
<tr>
<td>pH</td>
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<tr>
<td>BP/BP Range</td>
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<tr>
<td>MP/MP Range</td>
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<tr>
<td>Freezing Point</td>
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<tr>
<td>Vapor Pressure</td>
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<tr>
<td>Vapor Density</td>
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<tr>
<td>Saturated Vapor Conc.</td>
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<tr>
<td>SG/Density</td>
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<tr>
<td>Bulk Density</td>
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<tr>
<td>Odor Threshold</td>
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<tr>
<td>Volatile%</td>
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<tr>
<td>VOC Content</td>
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<tr>
<td>Water Content</td>
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<tr>
<td>Solvent Content</td>
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<tr>
<td>Evaporation Rate</td>
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<td>Viscosity</td>
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<td>Decomposition Temp.</td>
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<td>Optical Rotation</td>
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<tr>
<td>Miscellaneous Data</td>
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</tr>
<tr>
<td>Solubility</td>
<td>N/A</td>
</tr>
</tbody>
</table>

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.
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.
- Skin Absorption: May be harmful if absorbed through the skin.
- Eye Contact: May cause eye irritation.
- Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
- Ingestion: Harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)
- Central nervous system.

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
- 780 mg/kg
- LD50
- Remarks: Lungs, Thorax, or Respiration: Dyspnea.
- Behavioral: Convulsions or effect on seizure threshold.
- Behavioral: Tremor.

Intraperitoneal
- Rat
- 262 MG/KG
- LD50
- Remarks: Behavioral: Change in motor activity (specific assay).
- Behavioral: Altered sleep time (including change in righting reflex).

Subcutaneous
- Rat
- >3 GM/KG
- LD50

Intravenous
- Rat
- 31850 UG/KG
- LD50

Oral
- Mouse
- 224 mg/kg
- LD50

Intraperitoneal
- Mouse
- 117 MG/KG
- LD50
**Subcutaneous**
Mouse
118 MG/KG
LD50

**Intravenous**
Mouse
31 MG/KG
LD50

**CHRONIC EXPOSURE - REPRODUCTIVE HAZARD**

<table>
<thead>
<tr>
<th>Species: Rat</th>
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<tbody>
<tr>
<td>Dose: 5 MG/KG</td>
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<tr>
<td>Route of Application: Oral</td>
</tr>
<tr>
<td>Exposure Time: (1D PRE)</td>
</tr>
<tr>
<td>Result: Effects on Fertility: Other measures of fertility</td>
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</tbody>
</table>

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**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  
Risk Statements: Harmful if swallowed.

**US CLASSIFICATION AND LABEL TEXT**

Indication of Danger: Harmful.  
Risk Statements: Harmful if swallowed.  
US Statements: Target organ(s): Nerves.

**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.

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