



GARDENA, CA
NEW BRUNSWICK, NJ

Material Safety Data Sheet

| | | | | | | | | |
|-----------------|--|--------------------------------------|---|-------------|---|------------|---|--|
| NFPA | HMIS | Personal Protective Equipment | | | | | | |
| | <table border="1"> <tr><td>Health Hazard</td><td style="text-align: center;">1</td></tr> <tr><td>Fire Hazard</td><td style="text-align: center;">1</td></tr> <tr><td>Reactivity</td><td style="text-align: center;">0</td></tr> </table> | Health Hazard | 1 | Fire Hazard | 1 | Reactivity | 0 | |
| Health Hazard | 1 | | | | | | | |
| Fire Hazard | 1 | | | | | | | |
| Reactivity | 0 | | | | | | | |
| See Section 15. | | | | | | | | |

| Section 1. Chemical Product and Company Identification | | Page Number: 1 |
|---|---|---|
| Common Name/Trade Name | D-Mannosamine Hydrochloride | Catalog Number(s) M3220 |
| Manufacturer | SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248 | CAS# 5505-63-5 |
| Commercial Name(s) | Not available. | RTECS Not available. |
| Synonym | 2-Amino-2-deoxy-D-mannose hydrochloride | TSCA TSCA 8(b) inventory: D-Mannosamine Hydrochloride |
| Chemical Name | Not available. | CI# Not available. |
| Chemical Family | Not available. | IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000 |
| Chemical Formula | C6-H13-N-O5.HCl | |
| Supplier | SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248 | |

| Section 2. Composition and Information on Ingredients | | | | | |
|--|-----------|--------------------------|---------------------------|---------------------------|-------------|
| Name | CAS # | Exposure Limits | | | % by Weight |
| | | TWA (mg/m ³) | STEL (mg/m ³) | CEIL (mg/m ³) | |
| 1) {D-}Mannosamine Hydrochloride | 5505-63-5 | | | | 100 |
| Toxicological Data on Ingredients Not applicable. | | | | | |

| Section 3. Hazards Identification | |
|--|---|
| Potential Acute Health Effects | Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. |
| Potential Chronic Health Effects | CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition. |

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Section 4. First Aid Measures

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| Eye Contact | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs. |
| Skin Contact | Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. |
| Serious Skin Contact | Not available. |
| Inhalation | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. |
| Serious Inhalation | Not available. |
| Ingestion | Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband. |
| Serious Ingestion | Not available. |

Section 5. Fire and Explosion Data

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|--|---|
| Flammability of the Product | May be combustible at high temperature. |
| Auto-Ignition Temperature | Not available. |
| Flash Points | Not available. |
| Flammable Limits | Not available. |
| Products of Combustion | These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...). |
| Fire Hazards in Presence of Various Substances | Slightly flammable to flammable in presence of heat. |
| Explosion Hazards in Presence of Various Substances | Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. |
| Fire Fighting Media and Instructions | SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet. |
| Special Remarks on Fire Hazards | As with most organic solids, fire is possible at elevated temperatures |
| Special Remarks on Explosion Hazards | Not available. |

Section 6. Accidental Release Measures

| | |
|--------------------|--|
| Small Spill | Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements. |
| Large Spill | Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. |

Section 7. Handling and Storage

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| Precautions | Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents. |
| Storage | Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic |

Section 8. Exposure Controls/Personal Protection

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| Engineering Controls | Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. |
| Personal Protection | Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. |
| Personal Protection in Case of a Large Spill | Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. |
| Exposure Limits | Not available. |

Section 9. Physical and Chemical Properties

| | | | |
|--------------------------------------|--------------------------|--------------|----------------|
| Physical state and appearance | Solid. (Crystals solid.) | Odor | Not available. |
| Molecular Weight | 215.63 g/mole | Taste | Not available. |
| pH (1% soln/water) | Not available. | Color | White. |
| Boiling Point | Not available. | | |
| Melting Point | 170°C (338°F) - 175 C. | | |
| Critical Temperature | Not available. | | |
| Specific Gravity | Not available. | | |
| Vapor Pressure | Not applicable. | | |
| Vapor Density | Not available. | | |
| Volatility | Not available. | | |
| Odor Threshold | Not available. | | |
| Water/Oil Dist. Coeff. | Not available. | | |
| Ionicity (in Water) | Not available. | | |
| Dispersion Properties | Not available. | | |
| Solubility | Not available. | | |

Section 10. Stability and Reactivity Data

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| Stability | The product is stable. |
| Instability Temperature | Not available. |
| Conditions of Instability | Excess heat, incompatible materials, moisture |
| Incompatibility with various substances | Reactive with oxidizing agents. |
| Corrosivity | Not available. |

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Special Remarks on Reactivity Hygroscopic; keep container tightly closed.

Special Remarks on Corrosivity Not available.

Polymerization Will not occur.

Section 11. Toxicological Information

Routes of Entry Inhalation. Ingestion.

Toxicity to Animals LD50: Not available.
LC50: Not available.

Chronic Effects on Humans Not available.

Other Toxic Effects on Humans Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals Not available.

Special Remarks on Chronic Effects on Humans Not available.

Special Remarks on other Toxic Effects on Humans Acute Potential Health Effects:
Skin: May cause skin irritation.
Eyes: May cause eye irritation.
Inhalation: May cause respiratory tract irritation.
Ingestion: May cause gastrointestinal tract irritation. No information found. The toxicological properties of this substance have not been fully investigated.

Section 12. Ecological Information

Ecotoxicity Not available.

BOD5 and COD Not available.

Products of Biodegradation Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation Not available.

Section 13. Disposal Considerations

Waste Disposal Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

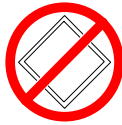
DOT Classification Not a DOT controlled material (United States).

Identification Not applicable.

Special Provisions for Transport Not applicable.

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DOT (Pictograms)



Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

TSCA 8(b) inventory: D-Mannosamine Hydrochloride

California Proposition 65 Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations

EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications

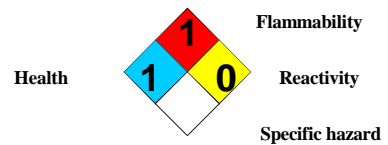
WHMIS (Canada) Not controlled under WHMIS (Canada).

DSCL (EEC) This product is not classified according to the EU regulations. Not applicable.

HMIS (U.S.A.)

| | |
|---------------------|---|
| Health Hazard | 1 |
| Fire Hazard | 1 |
| Reactivity | 0 |
| Personal Protection | E |

National Fire Protection Association (U.S.A.)



WHMIS (Canada) (Pictograms)



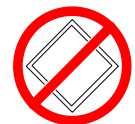
DSCL (Europe) (Pictograms)



TDG (Canada) (Pictograms)



ADR (Europe) (Pictograms)



Protective Equipment



Gloves.



Lab coat.



Dust respirator. Be sure to use an approved/certified respirator or equivalent.



Safety glasses.

Section 16. Other Information

MSDS Code M0221

References Not available.

Other Special Considerations Not available.

Validated by Sonia Owen on 8/11/2006.

Verified by Sonia Owen.

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CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.