Section 1 - Product and Company Information

Product Name                        L-ARGININE HYDROCHLORIDE, 98+%  
Product Number                      A92600  
Brand                               ALDRICH  
Company                             Sigma-Aldrich  
Street Address                      3050 Spruce Street  
City, State, Zip, Country          SAINT LOUIS MO 63103 US  
Technical Phone:                    314 771 5765  
Emergency Phone:                   414 273 3850 Ext. 5996  
Fax:                                800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name                      C6H14N4O2.ClH  
Formula                             L(+)-ARGININE MONOHYDROCHLORIDE  
Synonyms                            ARA 313  
RTECS Number                        CF1995500

Section 3 - Hazards Identification

HMIS RATING                         
HEALTH: 0                           
FLAMMABILITY: 0                     
REACTIVITY: 0                       

NFPA RATING                         
HEALTH: 0                           
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 contact, immediately wash skin with soap and copious
amounts of water.

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(S) OF PERSONAL PRECAUTION(S)
Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

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: Avoid inhalation. 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: Wear dust mask.
Hand: Protective gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties
Appearance              Physical State: Solid  
Color: Colorless  
Form: Fine crystals  

Property                              Value                              At Temperature or Pressure

Molecular Weight                     210.67 AMU                        
pH                                    5.5 - 7                             
BP/BP Range                          N/A 
MP/MP Range                          226 - 230 °C                       
Freezing Point                       N/A 
Vapor Pressure                       N/A 
Vapor Density                        N/A 
Saturated Vapor Conc.                N/A 
SG/Density                           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                     Degree of Rotation: 50 g/l Solvent: 5 M HCl  
                                      +26.5 - +22.0 (+/-0.5)               
Miscellaneous Data                  N/A 
Solubility                           Solubility in Water: 1 M in H2O, 20°C complete, colorless  
                                      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: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.  
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.

TOXICITY DATA

Intravenous
Child
3900 MG/KG
LDLO

Oral
Rat
12000 mg/kg
LD50

Intraperitoneal
Rat
3793 MG/KG
LD50

CHRONIC EXPOSURE - TERATOGEN

Species: Rat
Dose: 90 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1-6D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Section 12 - Ecological Information

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

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No
TSCA INVENTORY ITEM: Yes

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.
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