Guanidine hydrochloride Material Safety Data Sheet

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Section 1 - Chemical Product and Company Identification

MSDS Name: Guanidine hydrochloride

Synonym: Guanidine monohydrochloride; Guanidinium chloride; Aminoformamididine hydrochloride; Carbamidine hydrochloride; Iminourea hydrochloride

Manufactured By: Jiangsu Hualin Chemical Co., Ltd
Room 2310, 03# JiaYe International town 158# Lu Shan road, JianYe district, NanJing China.

Emergency Telephone: 0086-25-86634750 (day) 0086-13705171038 (night)
Prepared By: Jiangsu Hualin Chemical Co., Ltd

Section 2 - COMPOSITION, INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
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<th>EINECS#</th>
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<td>50-01-1</td>
<td>Guanidine hydrochloride</td>
<td>&gt;98</td>
<td>200-002-3</td>
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Hazard Symbols: XN
Risk Phrases: 22 36/38

Section 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Harmful if swallowed. Irritating to eyes and skin. Hygroscopic (absorbs moisture from the air).

Potential Health Effects

Eye:
Causes eye irritation.

Skin:
May cause severe skin irritation. Causes skin irritation. Not expected to cause an allergic skin reaction. A single prolonged skin exposure is not likely to result in the material being absorbed in harmful amounts.
Ingestion:
Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation:
Dust is irritating to the respiratory tract.

Chronic:
No information found.

Section 4 - FIRST AID MEASURES

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin:
In case of contact, immediately flush skin with plenty of water.
Remove contaminated clothing and shoes. Get medical aid. Wash clothing before reuse.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - FIRE FIGHTING MEASURES

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media:
Use extinguishing media most appropriate for the surrounding fire.

Section 6 - ACCIDENTAL RELEASE MEASURES
General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:
Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation.

Section 7 - HANDLING and STORAGE
Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid breathing dust.
Storage:
Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

Section 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION
Engineering Controls:
Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Exposure Limits CAS# 50-01-1: Personal Protective Equipment Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin:
Wear appropriate protective gloves to prevent skin exposure.
Clothing:
Wear appropriate protective clothing to prevent skin exposure.
Respirators:
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

Physical State: Crystalline powder
Color: white to light yellow
Odor: None reported.
pH: Not available.
Vapor Pressure: Not available.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point: 179 - 186 deg C
Autoignition Temperature: Not applicable.
Flash Point: Not applicable.
Explosion Limits, lower: Not available.
Explosion Limits, upper: Not available.
Decomposition Temperature: 310 deg C
Solubility in water: Soluble.
Specific Gravity/Density: 1.34 g/cm³
Molecular Formula: CH₅N₃.HCl
Molecular Weight: 95.53

**Section 10 - STABILITY AND REACTIVITY**

Chemical Stability:
Stable. However, may decompose if heated. Hygroscopic: absorbs moisture or water from the air.

Conditions to Avoid:
Dust generation, moisture, excess heat.

Incompatibilities with Other Materials:
Strong oxidizing agents.

Hazardous Decomposition Products:
Hydrogen chloride, nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, amines.

Hazardous Polymerization: Has not been reported.

Section 11 - TOXICOLOGICAL INFORMATION
RTECS#:

CAS# 50-01-1: MF43000000 LD50/LC50:

CAS# 50-01-1: Draize test, rabbit, eye: 81400 ug Moderate; Draize test, rabbit, skin: 500 mg/24H Severe; Oral, mouse: LD50 = 571 mg/kg; Oral, rat: LD50 = 475 mg/kg.

Inhalation rat LC50 (dust) 5.319 mg/L/4H = 21.276 mg/L/1H.

Carcinogenicity:
Guanidine hydrochloride - Not listed by ACGIH, IARC, or NTP.

Other:
See actual entry in RTECS for complete information.

Section 12 - ECOLOGICAL INFORMATION
Other No information available.

Section 13 - DISPOSAL CONSIDERATIONS
Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - TRANSPORT INFORMATION
IATA
Shipping Name: Not regulated.
Hazard Class:
UN Number:
Packing Group:
IMO
Shipping Name: Not regulated.
Hazard Class:
UN Number:
Packing Group:
RID/ADR

Shipping Name: Not regulated.

Hazard Class:

UN Number:

Packing group:

Section 15 - REGULATORY INFORMATION

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:
R 22 Harmful if swallowed.
R 36/38 Irritating to eyes and skin.

Safety Phrases:
S 22 Do not breathe dust.

WGK (Water Danger/Protection)
CAS# 50-01-1: 1

Canada
CAS# 50-01-1 is listed on Canada's DSL List.
CAS# 50-01-1 is not listed on Canada's Ingredient Disclosure List.

US FEDERAL

TSCA
CAS# 50-01-1 is listed on the TSCA inventory.