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Material Safety Data Sheet Magnesium Chloride

1. Product Identification

Product Name: Magnesium Chloride
MSDS Code: RF-MSDS-01
CAS No.: 7791-18-6
Molecular formula: $MgCl_2 \cdot 6H_2O$
Molecular Name: Magnesium Chloride Hexahydrate
Issue date: 2015.09.20

2. Composition/Information on Ingredients

Hazardous ingredient: Magnesium Chloride Hexahydrate $\geq 95.0\%$

3. Hazards Identification

Entry Routes : Inhalation and ingestion.
Health Hazards: For accidental take, it may cause diarrhea and may cause magnesium poisoning to persons of renal dysfunction with symptoms including gastralgia, vomiting, watery diarrhea, weakness, prostration, hard breath and cyanosis. For long-term contact of the powder of this product, it may cause inflammation of eyes and upper respiratory tract.
Environmental Hazards: No data
Fire & Explosion Hazards: This product is non-combustible.

4. First Aid Measures

Skin Contact: Remove contaminated clothes and flush with plenty of water.
Eyes Contact: Raise eyelids and flush with water flow or normal saline. Get medical care.
Inhalation: Remove to fresh air. Keep respiratory tract unblocked. Give oxygen if breathing is difficult; give artificial respiration if not breathing. Get medical care.
Ingestion: Drink plenty of water. Induce vomiting and get medical care.

5. Fire-Fighting Measures

Hazard Description: This product is not combustible. It may release toxic fume from thermal
Hazardous Combustion Products: Chlorine hydride and magnesium oxide.
Fire-Fighting Methods: Try to remove containers from fire area to safety places. Do not use full water jet to avoid spill fire or splashing.
Appropriate Fire Extinguishing Agents: Frog water, foam, powder and sand.

6. Accidental Release Measures

Emergency Measure: Isolate contaminated area and restrict access. Persons dealing with emergency are recommended wearing dust-proof respirators and uniforms. Do not contact leakage directly. For small leakage, just sweep it up, but avoid generating dust. Place it in bags and remove to a safe place. For large leakage, collect it for recycle or transport to waste-deposal place for appropriate disposal.

7. Handling and Storage

- Handling Precautions: Handle in a confined area, but good ventilation must be maintained. Prevent dust or powder from releasing into the air of workshops. Handling personnel must attend professional training and operate strictly according to operating instructions. Recommend wearing self-contained dust-proof respirators, safety chemical goggles, acid and alkali-resistant rubber uniforms and chemical protective gloves. Avoid generating dust. Stay away from oxidants. The storage area should be equipped with emergency equipments for leakage. The emptied containers may contain hazardous substances.
- Storage Precautions: Store in a cool, dry and well-ventilated store room. Stay away from fire and heat sources. Avoid direct sunlight. The containers should be tightly sealed. Do not store together with oxidants. The storage area should be equipped with emergency equipments for leakage.

8. Exposure Control/Personal Protection

Exposure Limits:

- China MAC: Not regulated
- United State TLV-TWA: Not regulated
- United State TLV-STEL: Not regulated
- Monitoring Method: Flame Atomic Absorption Spectrometry (FAAS) and Titan Yellow Colorimetry.
- Engineering Control: Produce in a confined area and quarantine good ventilation.
- Respiratory Protection: Recommend wearing self-contained dust-proof respirators when dust concentration is high in the air.
- Eyes Protection: Wear chemical safety goggles.
- Body Protection: Wear acid and alkali resistant rubber uniforms.
- Hands Protection: Wear chemical protective gloves.
- Further Information: Do not eating, drinking or smoking during working. Wash thoroughly after work. Keep good personal hygienic habits.

9. Physical & Chemical Properties

- Bases: Magnesium Chloride
- Appearance & Physical: white deliquescent hexagonal crystal.
- pH: <7
- Melting Point (°C): 708°C
- Boiling Point (°C): 1412°C
- Relative Density (water=1): 2.325(25°C)
- Relative Vapor Density (Air=1): Not available
- Saturated vapor pressure (kPa): Not available
- Combustion heat (kJ/mol): Not applicable
- Critical pressure (MPa): Not applicable
- Octanol /Water Partition Coefficient: Not applicable
- Flash Point (°C): Not applicable
- Igniting Temperature (°C): Not applicable
- Flammable/Explosive limits-Upper Vol %: Not applicable
- Flammable/Explosive limits-Lower Vol %: Not applicable
- Solubility: Soluble in water and alcohol.
- Application: Raw material for magnesium metal, disinfectant, snow melting, frozen brine and ceramics. Additive for textile and paper.
- Refractive index:

10. Stability and Reactivity

Stability: Not applicable
Incompatible substances: Strong oxidants
Conditions to avoid: Not applicable
Hazardous polymerization: Will not occur.
Combustion/Decomposition Products: Chlorine hydride and magnesium oxide.

11. Toxicological Information

Acute Toxicity: LD 50: 8100 mg/kg (Rat, oral)
LC50: No data
Chronic Toxicity: No data
Irritation: No data
Sensitivity: No data
Sensitivity: No data
Mutagenicity: No data
Teratogenicity: No data

12. Ecological Information

Eco-Toxicity: No data
Biodegradability: No data
Non-Biodegradability: No data
Biological Accumulation: No data
Other Hazardous Effects: No data
Other Information: No data

13. Disposal Consideration

Waste Class: No data
Disposal Methods: Use safety burying method. Bury it in an appropriate place and try to recycle containers.
Disposal Precautions: No data

14. Transportation Information

Sea, Air
Hazard Class: Not regulated as a hazardous cargo by IMDG
UN Code: No data
Packing Symbol: No data
Packing Group: No data
Packing Method: No data.
Transportation Attention: Check whether the package is completed or sealed before transporting; make sure there are no damage and no falling down of packages during transporting; do NOT transport together with oxidants. Stay away from direct sunlight, rain and high-temperature areas.

15. Regulatory Information

The Regulations of Safe Management Regarding Dangerous Chemicals (February 17, 1987), Implementing Rules of The Regulations of Safe Management Regarding Dangerous Chemicals (1992) and The Provisions of Safe Use of Chemicals in the Workplace (1996) state some requirements for safe use, production, storage, transportation, loading/unloading, classification of dangerous chemicals.

16. Other Information

References: 1.Canadian Centre for Occupational Health and Safety,CHEMINFO Database.1998
2.Canadian Centre for Occupational Health and Safety, RTECS Database, 1989
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