

MATERIAL SAFETY DATA SHEET

Product: **Ammonium chloride**

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: Ammonium chloride

Chemical Formula: NHCl_4

Product Code:

General or Generic ID: Ammonium Chloratum; Ammonium Chloridum; Ammonium Muriate Sal
Ammonia; Sal ammoniac; Salmiac

Company

Copper Harbor Company, Inc.
2250 Davis Street
San Leandro, CA 94577-2204
510-639-4670

Emergency Telephone Number:

1-800-451-8346

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>CAS No.</u>	<u>Chemical Identity</u>	<u>Common Name</u>
12125-02-9	Chloride salt (Salt)	Ammonium Chloride

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye:

Eye irritation upon contact. Symptoms include stinging, tearing, and redness.

Skin:

May cause mild skin irritation. Symptoms may include redness, burning of skin, or, occasionally, blistering. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Swallowing:

This product is an irritant. Prolonged contact can be destructive to tissue.

Inhalation:

Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts or over-exposure by inhalation may cause respiratory irritation.

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Symptoms of Exposure:

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), central nervous system excitation (giddiness, liveliness, light-headed feeling) followed by central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, pain in the abdomen and lower back, acute kidney failure (sudden slowing or stopping of urine production).

Development Information:

Not available.

Cancer Information:

Not available.

Primary Route(s) of Entry:

Inhalation, skin absorption, skin contact, eye contact.

4. FIRST AID MEASURES

Inhalation:

If affected, promptly remove individual to fresh air. If not breathing, give artificial respiration. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

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 clothing such as a collar, tie, belt or waistband. If possible, do not leave individual unattended.

Eyes:

Spread eyelids with fingers and flush eye for minimum of 15 minutes with water; keep rotating the eyes to ensure complete flushing. Cold water may be used. Seek medical attention if irritation persists or any loss of vision occurs.

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Skin:

Immediately remove contaminated clothing and thoroughly flush skin with plenty of water. Cover the irritated skin with an emollient. Cold water may be used. Seek medical attention if irritation from contact persists. Launder clothing before reuse.

Note to Physicians:

Pre-existing disorders of the following organs (or organ systems) may be aggravated by exposure to this material: liver, kidney, and central nervous system.

5. FIRE FIGHTING MEASURES

Flash Point: Not applicable.

Explosive Limit: Not available.

Auto-ignition Temperature: Not applicable.

Hazardous Products of Combustion: Not available.

Extinguishing Media: Not applicable.

SPECIAL FIRE-FIGHTING PROCEDURES:

Reaction between Ammonium Chloride and Bromine pentafluoride at ambient or slightly elevated temperature is violent, and ignition often occurs. Explosive reaction between bromine trifluoride and ammonium halides.

NFPA CODES: Health = 2 Flammability = 0 Reactivity = 0

6. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken In Case Material Is Released Or Spilled:

Small Spill:

Use appropriate tools to put 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. Prevent product from entering sewer, drains or waterways. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

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7. PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Do not ingest or breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical attention immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, and alkalis.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection:

If overexposure has been determined or documented, a NIOSH/MSHA jointly approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators under specified conditions. (See your safety equipment supplier.) Engineering or administrative controls should be implemented to reduce exposure.

Skin Protection:

Wear resistant gloves. To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Eye Protection:

Chemical splash goggles in compliance with OSHA regulations are advised.

Other Protective Clothing Or Equipment:

Provide sufficient mechanical ventilation to maintain exposure below level of overexposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Solid. (Crystalline powder.)

Molecular Weight: 53.49 g/mole

Boiling Point: 520 °C (968 °F)

Melting Point: Decomposition temperature 338 °C (640.4 °F)

Specific Gravity: 1.53 (Water=1)

Vapor Pressure: Not applicable.

Evaporation Rate: Not available.

Solubility: Soluble in cold water, hot water, methanol.

Insoluble in diethyl ether, acetone.

Solubility in Ethanol: 0.6g/100ml water at 19 °C.

Solubility in Water:

29.7 g/100ml water at 0 °C.

75.8g/100ml water at 100 °C.

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Soluble in liquid ammonia.

10. STABILITY AND REACTIVITY

Incompatibility: Reactive with oxidizing agents, acids, alkalis.

Stability: Stable

Hazardous Decomposition: Not available.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Primary routes of entry are inhalation and ingestion. Acute oral toxicity (LD50): 1300mg/kg (Mouse). May cause damage to the following organs: kidneys, liver, cardiovascular system, central nervous system.

12. ECOLOGICAL INFORMATION

No Data.

13. DISPOSAL CONSIDERATION

Waste Disposal Method:

Dispose of in accordance with all applicable local, state and federal regulations.

14. DOT SHIPPING NAME & IDENTIFICATION:

Not a DOT controlled material (United States).

Not available. UNNA: 9085, PGIII

15. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that information is current, applicable, and suitable to their circumstances.