**AMMONIUM CHLORIDE**

**PRODUCT IDENTIFICATION:**

- **Synonyms:** Sal ammoniac; Ammonium muriate
- **Formula CAS No.:** 12125-02-9
- **Molecular Weight:** 53.49
- **Chemical Formula:** NH₄Cl
- **Hazardous Ingredients:** Ammonium chloride

**PRECAUTIONARY MEASURES**

**WARNING!** CAUSES IRRITATION. HARMFUL IF SWALLOWED.

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

**EMERGENCY/FIRST AID**

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. If swallowed, DO NOT INDUCE VOMITING! Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases call a physician. SEE SECTION 5.

**DOT Hazard Class:** ORM-E

**SECTION 1 Physical Data**

- **Appearance:** White powder
- **Odor:** Odorless.
- **Solubility:** 29.7g/100g water @ 0°C (32°F)
- **Boiling Point:** 520°C (968°F)
- **Melting Point:** 338°C (640°F); Sublimes
- **Specific Gravity:** 1.53
- **Vapor Density (Air = 1):** 1.9
- **Vapor Pressure (mm Hg):** 1.0 @ 160°C (320°F)
- **Evaporation Rate:** No information found.

**SECTION 2 Fire and Explosion Information**

**Fire:**
Not considered to be a fire hazard unless decomposed to ammonia and hydrogen chloride. Mixtures of about 16% to 25% (by volume) ammonia gas in air are flammable.

**Explosion:**
Not considered to be an explosion hazard.

**Fire Extinguishing Media:**
Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.

**Special Information:**
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

**SECTION 3 Reactivity Data**

**Stability:**
Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**
Involvement in a fire causes decomposition to form hydrogen chloride and ammonia.

**Hazardous Polymerization:**
This substance does not polymerize.

**Incompatibilities:**
Concentrated acids, strong bases, silver salts, potassium chlorate, ammonium nitrate, bromine trifluoride and iodine heptafluoride.

**SECTION 4 Leak/Spill Disposal Information**

Ventilate area of leak or spill. Clean-up personnel may require respiratory protection from dust.

**Spills:** Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

**Disposal:** Whatever cannot be saved for reclamation may be delivered to an approved waste disposal facility. Reportable Quantity (RQ) (CWA Sec.311): 5000 lb.

Ensure compliance with local, state and federal regulations.

**NFPA Ratings:**

- **Health:** 2
- **Flammability:** 0
- **Reactivity:** 0

**Effective Date:** 04-06-89 Supersedes 07-16-85
Mallinckrodt
Material Safety Data

Emergency Phone Number: 314-982-5000

SECTION 5 Health Hazard Information

A. EXPOSURE / HEALTH EFFECTS

Inhalation:
Dust may cause irritation of the nose and throat. Thermal decomposition forms toxic gases which may irritate the respiratory tract.

Ingestion:
Large doses may cause nausea, vomiting and acidosis.

Skin Contact:
Contact with this material may cause skin irritation.

Eye Contact:
Contact with this material may cause redness and pain. May cause eye damage.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
No information found.

B. FIRST AID

Inhalation:
Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:
If swallowed, do NOT induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Exposure:
Wash thoroughly with running water. Get medical advice if irritation develops.

Eye Exposure:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

C. TOXICITY DATA (RTECS, 1986)

Oral rat LD50: 1650 mg/kg Irritation: Eye rabbit 500 mg/24H Severe

SECTION 6 Occupational Control Measures

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL):
  10 mg/m³ (TWA); 20 mg/m³ (STEL) Fume
-ACGIH Threshold Limit Value (TLV):
  10 mg/m³ (TWA); 20 mg/m³ (STEL) Fume

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators: (NIOSH Approved)
If the TLV is exceeded, a dust/mist respirator with chemical goggles may be worn, in general, up to ten times the TLV. Consult respirator supplier for limitations. Alternatively, a supplied air full facepiece respirator or airlined hood may be worn.

Skin Protection:
Wear protective gloves and clean body-covering clothing.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

SECTION 7 Storage and Special Information

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities.

AMMCL