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Material Safety Data Sheet

Ammonium Chloride, 2.0 M MSDS

Section 1: Chemical Product and Company Identification

Product Name: Ammonium Chloride, 2.0 M

Catalog Codes: SLA4741

CAS#: Mixture.

RTECS: Not applicable.

TSCA: TSCA 8(b) inventory: Ammonium chloride; Water

CI#: Not applicable.

Synonym: Ammonium Chloride, 2.0 M solution

Chemical Name: Not applicable.

Chemical Formula: Not applicable.

Contact Information:

Sciencelab.com, Inc.

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:

1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Ammonium chloride	12125-02-9	10-11
Water	7732-18-5	89-90

Toxicological Data on Ingredients: Ammonium chloride: ORAL (LD50): Acute: 1650 mg/kg [Rat.]. 1300 mg/kg [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:

Hazardous in case of eye contact (irritant). Slightly hazardous in case of skin contact (irritant, sensitizer, permeator), of ingestion, . Non-corrosive for skin. Non-corrosive to the eyes. Non-corrosive for lungs.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Not available.

Inhalation:

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

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances: Non-explosive in presence of open flames and sparks, of shocks.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Explosive reaction between bromine trifluoride and ammonium halides.
(Ammonium chloride)

Section 6: Accidental Release Measures

Small Spill:

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Absorb with an inert material and put the spilled material in an appropriate waste disposal. Neutralize the residue with a dilute solution of sodium carbonate. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Do not ingest. Do not breathe gas/fumes/ vapor/spray. Avoid contact with eyes. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Personal Protection: Splash goggles. Lab coat. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

Ammonium chloride TWA: 10 STEL: 20 (mg/m³) from ACGIH (TLV) [United States] Inhalation TWA: 10 STEL: 20 (mg/m³) [United Kingdom (UK)] Inhalation TWA: 10 STEL: 20 (mg/m³) from NIOSH [United States] Inhalation TWA: 10 STEL: 20 (mg/m³) from OSHA (PEL) [United States] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Odorless.

Taste: Not available.

Molecular Weight: Not applicable.

Color: Clear Colorless.

pH (1% soln/water): Acidic.

Boiling Point: The lowest known value is 100°C (212°F) (Water).

Melting Point: Not available.

Critical Temperature: Not available.

Specific Gravity: Weighted average: 1.04 (Water = 1)

Vapor Pressure: The highest known value is 2.3 kPa (@ 20°C) (Water).

Vapor Density: The highest known value is 0.62 (Air = 1) (Water).

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol.

Solubility:

Easily soluble in cold water, hot water. Soluble in methanol. Insoluble in diethyl ether, acetone.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials

Incompatibility with various substances: Slightly reactive to reactive with oxidizing agents, acids, alkalis.

Corrosivity: Not Available

Special Remarks on Reactivity:

Incompatible with lead and silver salts. It can react violently with ammonium nitrate and potassium chlorate. Also incompatible with bromine trifluoride, ammonium halides, bromine pentafluoride, alkalis and their carbonates. At fire temperature, ammonium chloride may dissociate into ammonia and hydrogen chloride.(Ammonium chloride)

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact.

Toxicity to Animals: Acute oral toxicity (LD50): 12381 mg/kg (Mouse) (Calculated value for the mixture).

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant, sensitizer, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals:

Lowest Published Lethal Dose: LDL [Human Infant] - Route: Oral; Dose: 2000 mg/kg (Ammonium chloride)

Special Remarks on Chronic Effects on Humans: May affect genetic material (mutagenic) Animal: passes through the placental barrier. (Ammonium chloride)

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: It can cause skin irritation which is usually mild. Eyes: Causes moderate eye irritation. It may cause Salt Cataract, increased ocular pressure, and degeneration of the retina Inhalation: It can cause respiratory tract and mucous membrane irritation which is usually mild. Ingestion: May be harmful if swallowed. May cause digestive tract irritation with nausea and vomiting, and thirst. May affect behavior/central nervous system (headache, somnolence, confusion, drowsiness, tremor, convulsions, coma), eyes (Mydriasis), cardiovascular system (bradycardia), respiration (respiratory stimulation, apnea, hyperventilation, pulmonary edema). May cause serious metabolic acidosis with hypokalemia. Transient hyperglycemia and glycosuria may also occur. Chronic Potential Health Effects: Skin: Prolonged or repeated contact may cause dermatitis, an allergic reaction. Inhalation: Prolonged or repeated inhalation may affect the kidneys. Ingestion: Prolonged or repeated ingestion may affect metabolism (anorexia, metabolic acidosis) and urinary system (enlargement of kidneys). Inhalation: Prolonged or repeated inhalation may cause bronchospasm (asthma) (Ammonium chloride)

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:

Illinois toxic substances disclosure to employee act: Ammonium chloride Illinois chemical safety act: Ammonium chloride New York release reporting list: Ammonium chloride Rhode Island RTK hazardous substances: Ammonium chloride Pennsylvania RTK: Ammonium chloride Minnesota: Ammonium chloride Massachusetts RTK: Ammonium chloride Massachusetts spill list: Ammonium chloride New Jersey: Ammonium chloride New Jersey spill list: Ammonium chloride Louisiana spill reporting: Ammonium chloride California Director's List of Hazardous Substances: Ammonium chloride TSCA 8(b) inventory: Ammonium chloride; Water CERCLA: Hazardous substances.: Ammonium chloride: 5000 lbs. (2268 kg);

Other Regulations: Not available.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):

R36/38- Irritating to eyes and skin. S24/25- Avoid contact with skin and eyes. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 0

Personal Protection: c

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:

Not applicable. Lab coat or Synthetic apron. Glove Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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