ESSENTIAL CHEMISTRY. INNOVATIVE SOLUTIONS.

SAFETY DATA SHEET

Print Date: August 16, 2023

Section 1: Product & Company Information

Product Identifier: **Ammonium Chloride**

Other Means of Identification
Product Number: 160000

Recommended Use and Restrictions on Use
Recommended Use: Food, Feed, Pharma, Metallurgy
Restrictions on Use: No data available.

Manufacturer / Importer / Supplier / Distributor Information

Company Name: CORECHEM Inc.
Address: 4320 Greenway Drive
Knoxville, TN 37918
USA

Information Telephone Number: 1-865-524-4239
Fax Number: 1-865-524-3375
Website: www.corecheminc.com
Contact Person: Regulatory Manager
E-mail: regulatory@corecheminc.com

Emergency Phone Number: Chemtrec® 1-800-424-9300 / Outside USA 1-703-527-3887 *(monitored 24 hours/day)*

Section 2: Hazards Identification

GHS Hazard Classification(s)
In accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

Physical Hazard(s)
Not classified.

Health Hazard(s)
Acute Toxicity, Oral - 4
(Corrosion)Damage/Irritation, Eye - 2A

Environmental Hazard(s)
Not classified.

Label Elements

Signal Word
WARNING

Hazard Symbol(s)

Hazard Statement(s)
H302: Harmful if swallowed.
H319: Causes serious eye Irritation.

Precautionary Statements

General
Not applicable.

Prevention
P264: Wash face, hands and any exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response
P301 + P312 + P330: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313: If eye irritation persists: Get medical advice/attention.

Storage

Not applicable.

Disposal

P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC)

None known.

Section 3: Composition/Information on Ingredients

Substance

Chemical Identity [2]	Common Name/Synonym(s)	CAS # [3]	Weight %	Impurity or Stabilizing Additive
Ammonium Chloride	-	12125-02-9	>98%	No
Anti-Caking Agent	-	—	0-<1%	No

1. Information regarding the composition and the percent ranges of the mixtures ingredients are not presented as it Confidential Business Information (CBI). Where a medical emergency exists (as determined by medical professional), timely disclosure of CBI is assured. The information omitted pertains to only the names of the substances and the concentration in the mixture (product) and can only be requested by a doctor/physician or Local/State/Provincial or Federal Authority.
2. Non-hazardous ingredients are not presented as to protect the proprietary formula of the product.
3. "— "Indicates ingredient is a mixture and contains multiple ingredients or may have no identifying CAS number.

Section 4: First-Aid Measures

General Information

If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.

Inhalation

Remove to fresh air Call a physician If breathing is irregular or stopped, administer artificial respiration Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation Artificial respiration and/or oxygen may be necessary Immediate medical attention is not required Move to fresh air in case of accidental inhalation of vapors If symptoms persist, call a physician.

Skin Contact

Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Immediate medical attention is not required.

Eye Contact

Flush with plenty of water for several minutes, holding eyelids open to assure thorough flushing. If contact lenses are present, remove them after the first 5 minutes if easy to do, and continue flushing. Obtain medical attention if irritation persists.

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Most important symptoms/effects, acute and delayed

Symptoms

Causes eye irritation. May cause mild skin and respiratory irritation. Harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting, thirst, headaches, hyperventilation and drowsiness.

Indication of immediate medical attention and special treatment needed

Hazards

No data available.

Treatment

Treat symptomatically. Symptoms may be delayed.

Section 5: Fire-Fighting Measures

General Fire Hazards

This material is not combustible but will decompose under fire conditions.

Suitable (and Unsuitable) Extinguishing Media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No data available.

Specific Hazards Arising from the Chemical

Nitrogen oxides (NOx), Hydrogen chloride gas. Not combustible. Fire may cause the evolution of nitrogen oxides, Hydrogen chloride gas, Ambient fire may liberate hazardous vapors.

Special Protective Equipment and Precautions for Firefighters

Special Fire-Fighting Equipment Procedures

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special Protective Equipment for Fire-Fighters

As in any fire, wear self-contained breathing apparatus pressure-demand (OSHA/NIOSH approved or equivalent) and full protective gear.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Advice for non-emergency personnel: Avoid inhalation of dust. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Methods and Materials for Containment and Clean-Up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dust.

Notification Procedures

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental Precautions

Do not let product enter drains.

Section 7: Handling and Storage

Precautions for Safe Handling

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation.

Conditions for Safe Storage, including any Incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep improperly labeled containers. Protect from moisture. Store at room temperature.

Section 8: Exposure Controls/Personal Protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Value	Source
Ammonium Chloride	TWA	10 mg/m3	US. ACGIH Threshold Limit Values
Ammonium Chloride	STEL	20 mg/m3	US. ACGIH Threshold Limit Values
Ammonium Chloride	TWA	10 mg/m3	NIOSH
Ammonium Chloride	ST	20 mg/m3	NIOSH
Ammonium Chloride	PEL	10 mg/m3	California permissible exposure limits for chemical contaminants.
Ammonium Chloride	STEL	20 mg/m3	California permissible exposure limits for chemical contaminants.
Ammonium Chloride	STEL	20 mg/m3	US OSHA Table Z-1
Ammonium Chloride	TWA	10 mg/m3	US OSHA Table Z-1

Biological Limit Values

The product does not contain any relevant quantities of hazardous materials with assigned biological limit values.

Appropriate Engineering Controls

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

Individual protection measures, such as personal protective equipment (PPE)

General Information

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Eye/Face Protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.

Skin Protection

Hand Protection

Wear appropriate chemical resistant gloves.

Other

Wear protective clothing if needed to avoid skin contact and contamination of personal clothing.

Respiratory Protection

required when dusts are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Hygiene Measures

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated footwear that cannot be cleaned. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Avoid contact with eyes, skin, and clothing.

Section 9: Physical and Chemical Properties

Appearance:	
Physical State:	Crystalline solid
Color:	White Powder.
Odor:	Odorless
Odor Threshold:	No data available.
pH:	5 - 5.5 at 25 °C (77 °F)
Melting Point/Freezing Point:	338 °C (640 °F) - (sublimed)
Initial Boiling Point and Boiling Range:	520 °C 968 °F
Flash Point:	Not applicable.
Evaporation Rate (butyl acetate=1)**:**	No data available.
Flammability (solid, gas):	Non-flammable.
Upper/Lower Limit on Flammability or Explosive Limits	
Flammability Limit – Upper:	No data available.
Flammability Limit – Lower:	No data available.
Explosive Limit – Upper:	No data available.
Explosive Limit – Lower:	No data available.
Vapor Pressure:	1.3 hPa at 160.4 °C (320.7 °F) 1.3 hPa at 30 °C (86 °F)
Vapor Density (air =1)**:**	1.9
Relative Density (water=1)**:**	No data available.
Solubility(ies):	
Solubility in water:	372 g/l at 20 °C (68 °F)
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-Ignition Temperature:	> 400 °C (> 752 °F) - Relative self-ignition temperature for solids does not ignite.
Decomposition Temperature:	No data available
Viscosity:	No data available.

Other Information:

Molecular Weight:	53.49 g/mol
Formula:	NH4Cl

Section 10: Stability and Reactivity

Reactivity

Reacts to produce Ammonia and hydrogen Chloride.

Chemical Stability

The product is chemically stable under standard ambient conditions (room temperature).

Possibility of Hazardous Reactions

Violent reactions are possible with alkali hydroxides and acids.

Risk of ignition or formation of inflammable gases or vapors with halogen-halogen compounds, alkaline, alkaline substances.

Risk of explosion with nitrates, chlorates, Heavy metal salts, nitrites, Hydrogen cyanide (hydrocyanic acid), Chlorine, silver salt, Strong oxidizing agents.

Conditions to Avoid

Heating to decomposition may produce nitrogen oxides, hydrogen chloride and ammonia gas.

Incompatible Materials

Aluminum, Lead, Iron, Copper, copper compounds.

Hazardous Decomposition Products

Nitrogen oxides (NOx).

Section 11: Toxicological Information

Information on routes of exposure

Ingestion: No data available.
Inhalation: No data available.
Skin Contact: No data available.
Eye Contact: No data available.

Information on Toxicological Effects

Acute Toxicity (List all possible routes of exposure)

Oral

Ammonium Chloride: LD50 (Rat): 1,410 mg/kg

Dermal

Ammonium Chloride: LD50: (Rabbit > 2000 mg/kg

Inhalation

No data available.

Repeated Dose Toxicity

No data available.

Skin Corrosion/Irritation

Skin - Rabbit
Result: No skin irritation - 24 h

Serious Eye Damage/Eye Irritation

Eyes - Rabbit
Result: Eye irritation.

Respiratory/Skin Sensitization

Maximization Test - Guinea pig
Result: negative.

Carcinogenicity

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

US. National Toxicology Program (NTP) Report on Carcinogens

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Germ Cell Mutagenicity

In Vitro

No mutagenic components identified.

In Vivo

No mutagenic components identified.

Reproductive Toxicity

None known.

Specific Target Organ Toxicity – Single Exposure

None known.

Specific Target Organ Toxicity – Repeated Exposure

None known.

Aspiration Hazard

Not classified.

Other Effects

None known.

Section 12: Ecological Information

Ecotoxicity

Acute Hazards to the Aquatic Environment

Fish

semi-static test LC50 - Cyprinus carpio (Carp) - 209.00 mg/l - 96 h

Aquatic Invertebrates

static test EC50 - Daphnia magna (Water flea) - 101 mg/l - 48 h

Toxicity to Aquatic Plants

static test ErC50 - Chlorella vulgaris (Fresh water algae) - 1,300 mg/l- 5 d

Chronic Hazards to the Aquatic Environment

Fish

No data available.

Aquatic Invertebrates

semi-static test NOEC - Daphnia magna (Water flea) - 14.6 mg/l -21 d

Toxicity to Aquatic Plants

No data available.

Persistence and Degradability

Biodegradation

No data available.

BOD/COD Ratio

No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)

No data available.

Mobility in Soil

No Mobility in soil is expected. Ammonium chloride is highly soluble and dissociates into ammonia and chloride ions.

Other Adverse Effects

No data available.

Section 13: Disposal Considerations

Disposal Instructions

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste.

Contaminated Packaging

Handle contaminated packages in the same way as the substance itself. Emptied containers may retain hazardous residue and explosive vapors. Keep away from heat, sparks, and flames. Do not cut, puncture, or weld on or near this container. Follow label warnings until container is thoroughly cleaned or destroyed.

Section 14: Transportation Information

US Department of Transportation (DOT)

This material is not regulated as a hazardous material for transport by the U.S. Department of Transportation in accordance with 49 CFR 172.101.

Section 15: Regulatory Information

US Federal Regulations

Toxic Substance Control Act (TSCA), Chemical Substance Inventory, Section 8(b)

This product or ingredient(s) are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substance List (40 CFR 302.4)

The following chemical(s) in this material are subject to reporting levels established by CERCLA:

Ammonium Chloride CAS# 12125-02-9

Clean Air Act (CAA), Section 112(r)

No chemical(s) in this material are subject to the reporting requirements of CAA.

Emergency Planning and Community Right-To-Know Act (EPCRA)

EPCRA 302 Extremely Hazardous Substance

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 302.

EPCRA 304 Emergency Response Notification

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 304.

EPCRA 311/312 Emergency and Hazardous Materials Reporting

Fire Hazard: No
Sudden Release of Pressure: No
Reactive: No
Acute (Immediate) Health Hazard: Yes
Chronic (Delayed) Health Hazard: No

EPCRA 313 Toxic Chemical Release Inventory (TRI) Reporting

The following components are subject to reporting levels established by SARA Title III, Section 313
Ammonium Chloride CAS# 12125-02-9

US State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Important Note: Due to the changing nature of regulatory requirements, the information in this document should NOT be considered all-inclusive or authoritative. Users should make their own investigations to determine the suitability of the information for their particular purposes. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements.

Section 16: Other Information

Hazardous Materials Identification System (HMIS®) Classification

Health Hazard: 2
Chronic Health Hazard: /
Flammability: 0
Physical Hazard: 0
(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

National Fire Protection Association (NFPA 704) Rating

Health Hazard: 2
Fire Hazard: 0
Reactivity Hazard: 0
Special: N/A
(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

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Key to Abbreviations and Acronyms

ATE - Acute Toxicity Estimate
BCF - Bioconcentration Factor
EC50 - Effective concentration, 50%
IDHL – Immediately Dangerous to Life and Health
Kg – Kilogram
l – Liter
lb – Pound
LC50 - Lethal Concentration, 50%
LD50 - Lethal Dose, 50%
mg - milligram
ml – milliliter
N/A – Not Applicable
N/D – Not Determined
PEL – Permissible Exposure Limit
REL – Recommended Exposure Limit
STEL – Short-term Exposure Limit
TWA - Time weighted average
ACGIH - American Conference of Industrial Hygienists
AIHA – American Industrial Hygiene Association
BEI - Biological Exposure Indices
CAS – Chemical Abstracts Service
DOT – US Department of Transportation
EPA – US Environmental Protection Agency
GHS - Globally Harmonized System of Classification and Labelling of Chemicals
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IBC - Intermediate Bulk Container
IMDG - International Maritime Dangerous Goods
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OSHA – US Occupational Health and Safety Administration
SARA – US EPA Superfund Amendments and Reauthorization Act
TSCA – US EPA Toxic Substances Control Act
UN - United Nations

References

HSDB® - Hazardous Substances Data Bank

Disclaimer

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