

Ammonium Chloride

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Ammonium Chloride

Synonyms/Generic Names: Ammonium Muriate, Ammonium Chloratum, Ammonium Chloridum, Sal Ammonia, Salmiac

SDS Number: 42.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Harmful by ingestion, Irritant

Target Organs: None

Signal Words: Warning

Pictograms:



GHS Classification:

Acute toxicity, Oral	Category 4
Eye irritation	Category 2A
Acute aquatic toxicity	Category 2

GHS Label Elements, including precautionary statements:

Hazard Statements:

H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H401	Toxic to aquatic life.

Precautionary Statements:

P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
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Potential Health Effects

Eyes	Causes eye irritation.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Ingestion	May be harmful if swallowed.

NFPA Ratings

Health	2
Flammability	0
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	2
Fire	0
Reactivity	0
Personal	E

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Ammonium Chloride	>99.5	12125-02-9	235-186-4	NH ₄ Cl	53049 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin	Flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Use appropriate media for adjacent fire. Cool unopened containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (nitrogen oxides, hydrogen chloride gas, ammonia) under fire conditions. (See also Stability and Reactivity section)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Sweep up and place in suitable, closed containers for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Avoid formation of dust. Use with adequate ventilation where dust is formed. Wash thoroughly after using. Keep container closed when not in use.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Ammonium Chloride	10 mg/m ³	TLV	ACGIH
	20 mg/m ³	STEL	ACGIH
	10 mg/m ³	PEL	OSHA
	20 mg/m ³	STEL	OSHA
	10 mg/m ³	REL	NIOSH
	20 mg/m ³	STEL	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, apron or lab coat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Colorless or white crystals or granular powder.
Odor	Odorless.
Odor threshold	Not Available
pH	4.5 - 5.5 at 50 g/L at 20°C (68°F)
Melting point/freezing point	Sublimes at 338°C (640°F)
Initial boiling point and boiling range	Not Available
Flash point	Not Flammable

Evaporation rate	Not Available
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	Not Available
Relative density	1.53
Solubility (ies)	Completely soluble in water and methanol.
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Moisture may affect product quality.
Incompatible Materials	Strong oxidizing agents, interhalogens, potassium chlorate, sodium nitrite, lead or silver salts, ammonium nitrate, strong acids, strong bases.
Hazardous Decomposition Products	Nitrogen oxides, hydrogen chloride gas, ammonia.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion	LD50 – Oral – Rat – 1410 mg/kg LD50 – Oral – Mouse – 1300 mg/kg

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Mild irritation.
Eyes	Irritation.
Respiratory	Respiratory tract and mucous membrane irritation.
Ingestion	Nausea, vomiting, thirst.

Chronic Toxicity	Not Available
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	LC50 – Cyprinus carpio – 209 mg/L – 96 hr LC50 – Oncorhynchus mykiss – 4 mg/L – 96 hr NOEC – Oncorhynchus mykiss – 57 mg/L – 96 hr
Aquatic Invertebrate	LC50 – Daphnia magna – 161 mg/L – 48 hr
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste products or residues.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	Not Dangerous Goods
TDG	Not Dangerous Goods
IMDG	Not Dangerous Goods
Marine Pollutant	No
IATA/ICAO	Not Dangerous Goods

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Acute Health Hazard
SARA 312	Acute Health Hazard
SARA 313	Listed: Ammonium Chloride
WHMIS Canada	Class D-2B: Poisonous and infectious material - Other effects - Toxic

16. OTHER INFORMATION

Revision	Date
Revision 1	06/08/2012
Revision 2	06/20/2013

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