

ZACLON LLC

MATERIAL SAFETY DATA SHEET

IDENTIFICATION

NAME Ammonium Chloride Solution **CHEMICAL FAMILY** Inorganic Salt Solution

GRADE Various Strengths **I.D. NOS./CODES**
NIOSH Registry No: BP4550000

SYNONYMS None **FORMULA** NH₄Cl

MANUFACTURER/DISTRIBUTOR Zaclon LLC **PRODUCT INFORMATION PHONE** (800) 356-7327

ADDRESS 2981 Independence Road **TRANSPORTATION EMERGENCY PHONE** CHEMTREC (800) 424-9300
Cleveland, Ohio 44115

PHYSICAL DATA

FREEZE POINT, 10 °F (for 20%)
50 °F (for 25%)

MELTING POINT
Not Applicable

SPECIFIC GRAVITY
1.058 - 1.073

VAPOR PRESSURE
Nil

VAPOR DENSITY
Not applicable

SOLUBILITY IN WATER
Not Applicable

pH INFORMATION
3 to 6

EVAPORATION RATE
(BUTYL ACETATE=1)
0

FORM
Solution

APPEARANCE
Clear

COLOR
Water White

ODOR
Odorless

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

HAZARDOUS COMPONENTS

<u>MATERIAL(S)</u>	<u>CAS NO.</u>	<u>APPROXIMATE %</u>
Ammonium Chloride*	12125-02-9	20% - 25%
Water	7732-18-5	75% - 80%

*Ammonium Salts Generate Ammonia in Water. For SARA 313 Requirements, 10% of the Total ammonia present in aqueous ammonia solutions is reportable.

HAZARDOUS REACTIVITY

INSTABILITY

Stable at room temperature. After water evaporation, solid sublimes with heat; dissociates into hydrogen chloride and ammonia gases.

INCOMPATIBILITY

Incompatible with alkalis, strong oxidants, potassium chlorate.

DECOMPOSITION

If evaporated, will decompose with heat, releasing hydrogen chloride and ammonia gases which partially reform ammonium chloride as a dust cloud or smoke (see Fire and Explosion Hazards, below).

POLYMERIZATION

Will not occur.

FIRE AND EXPLOSION DATA

FLASH POINT Will not burn. **FLAMMABLE LIMITS IN AIR % BY VOL.**
LOWER Not applicable.

AUTOIGNITION TEMPERATURE **UPPER** Not applicable.
Not applicable.

AUTODECOMPOSITION TEMPERATURE Not available.

FIRE AND EXPLOSION HAZARDS If evaporated and overheated, 260-315 °C (500-600 °F), hydrogen chloride and ammonia gases may be released. No explosion hazards.

EXTINGUISHING MEDIA As appropriate for combustibles in area (Foam, Dry Chemical, and CO₂). Water spray will reduce irritating fumes and gases.

SPECIAL FIRE FIGHTING INSTRUCTIONS Wear self-contained breathing apparatus. Wear full protective equipment.

HEALTH HAZARD INFORMATION

PRINCIPAL HEALTH HAZARDS (Including Significant Routes, Effects, Symptoms of Over-Exposure, and Medical Conditions Aggravated by Exposure)

Oral LD50: 1650 mg/kg in rats for solid ammonium chloride

The compound is not a skin irritant and is not an eye irritant in animals. Toxic effects described in animals from short exposures by ingestion include effects on acid-base

balance and water metabolism. Toxic effects in animals occurring only with inhalation exposures are lower respiratory irritation. Tests for mutagenic activity in bacterial or mammalian cell cultures have been inconclusive with positive results in some studies and negative results in others.

Human health effects of overexposure may initially include: no anticipated adverse effects. Higher ingestion exposures may lead to nonspecific discomfort, such as nausea or vomiting; or profound acidosis.

CARCINOGENICITY Not listed as a carcinogen by IARC, NTP, OSHA, or ACGIH.

EXPOSURE LIMITS [PEL (OSHA), TLV (ACGIH), ETC.]

Exposure limits for ammonium chloride have not been established by OSHA or ACGIH. The ACGIH 8-hour TLV®-TWA is 10 mg/m³ for ammonium chloride fumes and the ACGIH Short Term Exposure Limit (STEL) is 20 mg/m³ for ammonium chloride fumes.

SAFETY PRECAUTIONS

Avoid breathing fumes.
Wash thoroughly after handling.

FIRST AID

If large amounts are inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person. Call a physician.

In case of eye contact, immediately flush with plenty of water for at least 15 minutes. Call a physician.

The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable.

PROTECTION INFORMATION

GENERALLY APPLICABLE CONTROL MEASURES

Good general ventilation should be provided to keep concentrations below the exposure limit.

PERSONAL PROTECTIVE EQUIPMENT

Safety spectacles and, if exposure limits are exceeded, a filter respirator approved by NIOSH for dust and fumes.

DISPOSAL INFORMATION

AQUATIC TOXICITY The 48-hour LC50 in freshwater barb is 295-315 mg/L. (Solid ammonium chloride)

SPILL, LEAK OR RELEASE Flush entire spill area with plenty of water to chemical sewer. Comply with Federal, State, and local regulations on reporting releases.

WASTE DISPOSAL Comply with Federal, State, and local regulations. If approved, flush to chemical sewer or transfer to a disposal contractor.

SHIPPING INFORMATION

DOT/IMO

PROPER SHIPPING NAME

Environmentally Hazardous Substance, Liquid, N.O.S.
(Contains Ammonium Chloride)

HAZARD CLASS 9

I.D. NUMBER UN3082

PACKING GROUP III

SPECIAL INFORMATION: Not regulated by DOT/IMO when shipped in packages less than 5000 lbs. of Ammonium Chloride.

TITLE III HAZARD CLASSIFICATION:

Acute	Yes
Chronic	No
Fire	No
Reactivity	No
Pressure	No

OTHER INFORMATION

REPORTABLE QUANTITY 5,000 pounds

SHIPPING CONTAINERS 55 Gallon Drums, Totes, Tank Trucks, Tank Cars

STORAGE CONDITIONS Store in a clean, dry place away from strong alkalis and strong oxidants.

NPCA-HMIS RATINGS

Health 1

Flammability 0

Reactivity 0

Personal Protection -

Personal protection rating to be supplied by the user depending on use conditions.

ADDITIONAL INFORMATION AND REFERENCES

For further information, see Zaclon LLC "Ammonium Chloride Solutions" Data Sheet.

DATE OF LATEST REVISION/REVIEW: March 2005

PERSON RESPONSIBLE FOR MSDS: J.L. Curry

Zaclon LLC

2981 Independence Road

Cleveland, Ohio 44115

800-356-7327 OR 216-271-1601