

 <p>CHEMLABS Quality Our Forte</p>	<p>LEONID CHEMICALS PVT. LTD., BANGALORE</p> <p>An ISO-9001:2008 Certified Company</p> <p>Quality Assurance Department</p>	<p>(CODE) DOCUMENT : WI (CODE) SECTION : WI/SM (DATE) : 01.04.2011</p>	 <p>Issue : 02 Rev.: 00</p>
<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): AMMONIUM CHLORIDE</p>			<p>1 Page of 1</p>

SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION MSDS

Name: Ammonium Chloride

Catalog Numbers: A013

Synonyms: Ammonium chloratum, ammonium chloridum, ammonium muriate, salammonia, salmiac.

Company Information:
LEONID CHEMICALS Pvt Ltd,
62/A-2, 1st Stage,
Yeshvanthpur Industrial Suburb,
Asoka puram School Road,
Bangalore -22, Karnataka, INDIA
Ph- +91-80-23378354
Fax: +918023378354/23377126

SECTION 2- COMPOSITION, INFORMATION ON INGREDIENTS

CAS # : 12125-02-9
Chemical Name : Ammonium chloride
% : Min 99.5%
EINECS# : 235-186-4
Hazard Symbols : None Listed.
Risk Phrases : None Listed.

SECTION 3- HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Information not available.

Potential Health Effects

Eye:

May cause eye irritation.

Skin:

May cause skin irritation.

Ingestion:

May cause irritation of the digestive tract. May cause systemic toxicity with acidosis.

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Inhalation:

If heated, dust or fume may cause respiratory tract irritation.

Chronic:

Prolonged or repeated skin contact may cause dermatitis.

SECTION 4- FIRST AID MEASURES

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin:

Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Remove contaminated clothing and shoes.

Ingestion:

Induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid.

Inhalation:

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Information not available.

SECTION 5- FIRE FIGHTING MEASURES

General Information:

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

Extinguishing Media:

Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

SECTION 6 -ACCIDENTAL RELEASE MEASURES

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions.

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SECTION 7 - HANDLING AND STORAGE

Handling:

Wash thoroughly after handling. Keep container tightly closed. Do not get on skin or in eyes. Avoid ingestion and inhalation.

Storage:

Store in a cool, dry, well-ventilated area away from incompatible substances.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard En166.

Skin: Wear impervious gloves.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State	: Solid
Color	: Colorless crystals or white granular powder.
Odor	: None.
pH	: 5.0 (10% sol at 77F)
Vapor Pressure	: Information not available.
Viscosity	: Information not available.
Boiling Point	: 968°F
Freezing/Melting Point	: 662°F
Autoignition Temperature	: Information not available.
Flash Point	: Information not available.
Explosion Limits, lower	: Information not available.
Explosion Limits, upper	: Information not available.
Decomposition Temperature	: Information not available.

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Solubility in water : 39.6% at 176F.
 Specific Gravity/Density : 1.53 g/mL (Water=1)
 Molecular Formula : NH₄Cl
 Molecular Weight : 53.4877

SECTION 10 -STABILITY AND REACTIVITY

Chemical Stability:

Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid:

Excess heat.

Incompatibilities with Other Materials:

Acids, alkalis, and their associated carbonates. Substance reacts with lead and silver salts to form a fulminating compound. Substance reacts with ammonium compounds, bromine pentafluoride, bromine trifluoride, hydrogen cyanide, iodine heptafluoride, nitrates, and potassium chlorate.

Hazardous Decomposition Products:

Ammonia and hydrochloric acid fumes.

Hazardous Polymerization:

Has not been reported.

SECTION 11 -TOXICOLOGICAL INFORMATION

RTECS#:

CAS# 12125-02-9: BP4550000 Bp4570000

LD50/LC50:

CAS# 12125-02-9: Draize test, rabbit, eye: 500 mg/24H Mild; Draize test, rabbit, eye: 100 mg Severe; Oral, mouse: LD50 = 1300 mg/kg; Oral, rat: LD50 = 1650 mg/kg.

Carcinogenicity:

Ammonium chloride - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Other:

See actual entry in RTECS for complete information.

SECTION 12 -ECOLOGICAL INFORMATION

Ecotoxicity:

Sunfish (fresh water) TLm=6 ppm/96H

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SECTION 13 -DISPOSAL CONSIDERATIONS

Products which are considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local waste regulator for advice. Empty containers must be decontaminated before returning for recycling.

SECTION 14 -TRANSPORT INFORMATION

IATA

Not regulated as a hazardous material.

IMO

Not regulated as a hazardous material.

RID/ADR

Not regulated as a hazardous material.

USA RQ:

CAS# 12125-02-9: 5000 lb final RQ; 2270 kg final RQ

SECTION 15 - REGULATORY INFORMATION

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

Information not available.

Risk Phrases:

Information not available.

Safety Phrases:

Information not available.

WGK

(Water Danger/Protection) CAS# 12125-02-9: 1

United Kingdom Occupational Exposure Limits

CAS# 12125-02-9: OES-United Kingdom, TWA 10 mg/m³ TWA (fume)

CAS# 12125-02-9: OES-United Kingdom, STEL 20 mg/m³ STEL (fume)

United Kingdom Maximum Exposure Limits Canada

CAS# 12125-02-9 is listed on Canada's DSL List.

CAS# 12125-02-9 is listed on Canada's Ingredient Disclosure List.

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Exposure Limits

CAS# 12125-02-9:

OEL-ARAB Republic of Egypt: TWA 10 mg/m³ (fume)

OEL-AUSTRALIA: TWA 10 mg/m³; STEL 20 mg/m³ (fume)

OEL-BELGIUM: TWA 10 mg/m³; STEL 20 mg/m³ (fume)

OEL-DENMARK: TWA 10 mg/m³ (fume)

OEL-FRANCE: TWA 10 mg/m³ (fume)

OEL-THE NETHERLANDS: TWA 10 mg/m³ (fume)

OEL-RUSSIA: STEL 10 mg/m³ (fume)

OEL-SWITZERLAND: TWA 6 mg/m³ (fume)

OEL-UNITED KINGDOM: TWA 10 mg/m³; STEL 20 mg/m³ (fume)

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

US FEDERAL

TSCA

CAS# 12125-02-9 is listed on the TSCA inventory.

SECTION 16 - ADDITIONAL INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Leonid Chemicals Pvt. Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Leonid Chemicals Pvt. Ltd. has been advised of the possibility of such damages.

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		(CODE) SECTION : A013	
Title: SPECIFICATION MANUAL - AMMONIUM CHLORIDE			Issue : 02 Rev.: 00 1 Page of 2

Specification manual - Ammonium chloride

NH₄Cl

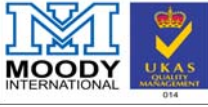
Mol Wt: 53.49

Product : Ammonium chloride AR
Description : A white crystalline powder
Cat No : A013
Cas No : 12125-02-9
Prepared Date : 07.03.2004
Approved Date : 07.03.2004

REVISION HISTORY			
Issue/Rev	Description of Change	Author	Effective Date
01/00	Initial Release	S. Paul Joshua	07.03.2005
02/00	Reviewed no changes	S. Paul Joshua	01.04.2011
Next Review Due :	02.04.2015		
To be reviewed by :	Head-QC/QA		

Sl. No.	Tests	Specification
		AR
1	Assay	NLT 99.5 percent NH ₄ Cl
2	pH of solution	NLT 4.6
3	Insoluble matter	0.001 percent
4	Non-volatile matter	0.005 percent
5	Iodide (I)	0.0001 percent
6	Nitrate (PO ₃)	0.00005 percent
7	Phosphate (PO ₄)	0.0003 percent
8	Sulphate (SO ₄)	0.00005 percent
9	Arsenic (AR)	0.00005 percent
10	Calcium group and magnesium (Ca)	0.0012 percent

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance

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11	Copper (Cu)	0.00025 percent
12	Iron (Fe)	0.0002 percent
13	Lead (Pb)	0.0002 percent
14	Pyridine and homologues	0.001 percent

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance