

MATERIAL SAFETY DATA SHEET

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name: Ammonium chloride
Product code: A013
Brand: LEONID
CAS-No.: 12125-02-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Leonid Chemicals Pvt. Ltd
Plot No. 30P2, KIADB Industrial Area
Dobaspet – 562111
Taluk – Nelamangala
District – Bangalore Rural
State – Karnataka
India

1.4 Emergency telephone number

Emergency phone number: +91 23377126 / 23378254

2. Hazards identification

2.1 Classification of the substance or mixture

Acute toxicity, Oral (Category 4), H302
Serious eye damage/eye irritation (Category 2A), H319
For the full text of the H-Statements mentioned in this Section, see section 16.

2.2 Label elements

Pictogram: GHS07 – Exclamation mark
Signal word: Warning

Hazard statements

H302 Harmful if swallowed.
H319 Causes serious eye irritation.

Precautionary statements

Prevention

P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear eye protection/ face protection.

Response

P301 + P312 + P330
IF SWALLOWED: Call a POISON CENTER/ doctor 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.

Disposal

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients

3.1 Substances

Synonyms:	Salmiac
Formula:	NH ₄ Cl
Molecular weight:	53.49 g/mol
CAS-No.:	12125-02-9
EC-No.:	235-186-4
Index-No.:	017-014-00-8

Hazardous components

Ammonium chloride, CAS-No. 12125-02-9 — Acute Tox. 4; Eye Irrit. 2A; H302, H319 — <= 100 %

4. First aid measures

4.1 Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air.

In case of skin contact

Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact

Rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

Immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Nitrogen oxides (NO_x), Hydrogen chloride gas. Not combustible. Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

5.4 Further information

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

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning 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 dusts.

6.4 Reference to other section

For disposal see section 13.

7. Handling and storage

7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): 13: Non Combustible Solids

7.3 Specific end uses

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Ammonium chloride (CAS-No. 12125-02-9): TWA 10 mg/m³ — Australia, Workplace Exposure Standards for Airborne Contaminants; STEL 20 mg/m³ — Australia, Workplace Exposure Standards for Airborne Contaminants.

8.2 Exposure control

Appropriate engineering controls

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

Personal protective equipment

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

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material:	Nitrile rubber
Minimum layer thickness:	0.11 mm
Break through time:	480 min
Material tested:	Dermatril

Splash contact

Material:	Nitrile rubber
Minimum layer thickness:	0.11 mm
Break through time:	480 min
Material tested:	Dermatril

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an

approval for any specific use scenario.

Body Protection

Protective clothing. Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Respiratory protection

Required when dusts are generated. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	White solid
b) Odour	Odourless
c) Odour Threshold	No data available
d) pH	5 - 5.5 at 25 °C
e) Melting point/freezing point	338 °C (sublimed)
f) Initial boiling point and boiling range	520 °C
g) Flash point	Not applicable
h) Evaporation rate	No data available
i) Flammability (solid, gas)	The product is not flammable.
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	1.3 hPa at 30 °C; 1.3 hPa at 160.4 °C
l) Vapour density	No data available
m) Relative density	1.53 g/cm ³ at 25 °C
n) Water solubility	372 g/l at 20 °C
o) Partition coefficient: n-octanol/water	Not applicable for inorganic substances
p) Auto-ignition temperature	> 400 °C - does not ignite
q) Decomposition temperature	Not applicable
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	None

9.2 Other safety information

No data available

10. Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Violent reactions possible with: alkali hydroxides, acids.

Risk of ignition or formation of inflammable gases or vapours with: halogen-halogen compounds, alkalines, alkaline substances.

Risk of explosion with: nitrates, chlorates, heavy metal salts, nitrites, hydrogen cyanide (hydrocyanic acid), chlorine, silver salt, strong oxidizing agents.

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Aluminium, lead, iron, copper, copper compounds.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Nitrogen oxides (NO_x), hydrogen chloride gas. Other decomposition products - No data available

In the event of fire: see section 5

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 1,410 mg/kg (OECD Test Guideline 401) (Ammonium chloride)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

LD50 Dermal - Rat - male and female - > 2,000 mg/kg

Skin corrosion/irritation

Skin – Rabbit (Ammonium chloride)

Result: No skin irritation - 24 h

Serious eye damage/eye irritation

Eyes – Rabbit (Ammonium chloride)

Result: Eye irritation

Respiratory or skin sensitisation

Maximisation Test - Guinea pig (Ammonium chloride)

Result: negative (OECD Test Guideline 406)

Germ cell mutagenicity

Ames test - Escherichia coli/Salmonella typhimurium, with and without metabolic activation (OECD Test Guideline 471). Result: negative

Chromosome aberration - Chinese hamster lung cells, without metabolic activation (OECD Test Guideline 473). Result: positive

Micronucleus test - Mouse, bone marrow, intraperitoneal injection (OECD Test Guideline 474). Result: negative

In vivo tests did not show mutagenic effects.

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 90 d - NOAEL - 1,695.7 mg/kg (subchronic toxicity)

RTECS: BP4550000

The following applies to ammonium salts in general: after swallowing, local irritation symptoms, nausea, vomiting, diarrhoea. Systemic effect: after the uptake of very large quantities, drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, haemolysis.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (Ammonium chloride)

12. Ecological information

12.1 Toxicity

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

Toxicity to daphnia and other aquatic invertebrates: static test EC50 - Daphnia magna (Water flea) - 101 mg/l - 48 h

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

Toxicity to bacteria: static test EC50 - activated sludge - 1,310 mg/l - 0.5 h (OECD Test Guideline 209)

Chronic toxicity to daphnia and other aquatic invertebrates: semi-static test NOEC - Daphnia magna (Water flea) - 14.6 mg/l - 21 d

12.2 Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No data available

13. Disposal considerations

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations.

Leave chemicals in original containers. No mixing with other waste. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. Transport information

14.1 UN number

ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

14.3 Transport hazard class(es):

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

Not classified as dangerous in the meaning of transport regulations.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H319	Causes serious eye irritation.

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.