



## Safety Data Sheet

Version: 1.2

Revision date: SEPT-01-2023

Retrieve on: SEPT-10-2023

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifiers

Product name	:	Ammonium chloride
REACH No.	:	01-2119489385-24-XXXX
CAS-No.	:	12125-02-9
Index-No.	:	CH-S0-A013

#### 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	VALERIAN LABS HOLDING CORP
Address	1130-1971 BROADWAY STREETPORT COQUITLAM, BC V3C 0C9 CANADA
Telephone	+1 (604)-710-0869
E-mail:	<a href="mailto:info@valerianlabs.com">info@valerianlabs.com</a>

#### 1.4 Emergency telephone

##### Number:

1-888-226-8832 CANUTEC (CANADA)

1-800-424-9300 CHEMTREC (USA)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### In accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Acute toxicity, Oral (Category 4), H302

Eye irritation (Category 2), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 Label elements

##### Labelling in accordance with GHS Standards

Pictogram



Signal Word

Warning





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**Hazard statement(s)**

H302 Harmful if swallowed.  
 H319 Causes serious eye irritation.

**Precautionary statement(s)**

P264 Wash skin thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P280 Wear eye protection/ face protection.  
 P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.  
 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.

Supplemental Hazard Statements none

**Reduced Labeling (<= 125 ml)**

Pictogram



Signal Word Warning

Hazard statement(s) none

Precautionary statement(s) none

Supplemental Hazard Statements none

**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.

**SECTION 3: Composition/information on ingredients****3.1 Substances**

Synonyms : Salmiac  
 Formula : H<sub>4</sub>CIN  
 Molecular weight : 53,49 g/mol  
 CAS-No. : 12125-02-9  
 EC-No. : 235-186-4  
 Index-No. : CH-S0-A013

Component	Classification	Concentration
<b>ammonium chloride</b>		
CAS-No. 12125-02-9 EC-No. 235-186-4	Acute Tox. 4; Eye Irrit. 2; H302, H319	<= 100 %





### SECTION 4: First aid measures

#### 4.1 Description of first-aid measures

##### General advice

Show this material safety data sheet to the doctor in attendance.

##### If inhaled

After inhalation: fresh air.

##### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

##### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

##### If swallowed

After swallowing: 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

### SECTION 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<sub>x</sub>)

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/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.





### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: 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 sections

For disposal see section 13.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

##### Storage conditions

Tightly closed. Dry.

Hygroscopic.

##### Storage class

Storage class (TRGS 510): 13: Non Combustible Solids

#### 7.3 Specific end use(s)

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

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

##### Ingredients with workplace control parameters

##### Derived No Effect Level (DNEL)

Application Area	Routes of exposure	Health effect	Value
Worker DNEL, longterm	inhalation	Systemic effects	43,97 mg/m3
Worker DNEL, longterm	dermal	Systemic effects	
Consumer DNEL, longterm	inhalation	Systemic effects	9,4 mg/m3
Consumer DNEL, longterm	dermal	Systemic effects	
Consumer DNEL, longterm	oral	Systemic effects	





### Predicted No Effect Concentration (PNEC)

Compartment	Value
Fresh water	0,25 mg/l
Fresh water sediment	0,9 mg/kg
Sea water	0,025 mg/l
Sea sediment	0,09 mg/kg
Aquatic intermittent release	0,43 mg/l
Soil	50,7 mg/kg
Sewage treatment plant	13,1 mg/l

## 8.2 Exposure controls

### Personal protective equipment

#### Eye/Face Protection:

Utilize eye protection equipment that has been tested and certified in accordance with relevant government standards, such as NIOSH (for the US) or EN 166 (for the EU). Safety glasses should be used.

#### Skin Protection:

This recommendation specifically pertains to the product detailed in the safety data sheet, which is supplied by us and intended for its designated use. It does not apply when the product is being dissolved or mixed with other substances under conditions that deviate from those outlined in EN374.

#### Body Protection:

Protective clothing is required.

#### Respiratory Protection:

Respiratory protection is necessary when dusts are being generated. Our recommendations for filtering respiratory protection are based on various standards including DIN EN 143, DIN 14387, and other associated standards related to the specific respiratory protection system in use. The recommended filter type is P2.

Entrepreneurs are responsible for ensuring that the maintenance, cleaning, and testing of respiratory protective devices are conducted in accordance with the producer's instructions. Proper documentation of these measures is essential.





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### Control of environmental exposure

Do not let product enter drains.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |   |  |
|---|--|
| a) Physical state                               | powder   |
| b) Color  | white  |
| c) Odor   | odorless   |
| d) Melting point/freezing point                 | Melting point: 338 °C - (sublimed)   |
| e) Initial boiling point and boiling range      | 520 °C   |
| f) Flammability (solid, gas)                    | The product is not flammable. - Flammability (solids)                            |
| g) Upper/lower flammability or explosive limits | No data available  |
| h) Flash point                                  | Not applicable   |
| i) Autoignition temperature                     | > 400 °C<br>- Relative self-ignition temperature for solids does not             |
| j) Decomposition temperature                    | igniteNot applicable   |
| k) pH   | 5 - 5,5 at 25 °C   |
| l) Viscosity                                    | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) Water solubility                             | 372 g/l at 20 °C   |
| n) Partition coefficient: n-octanol/water       | Not applicable for inorganic substances  |
| o) Vapor pressure                               | 1,3 hPa at 160,4 °C<br>1,3 hPa at 30 °C  |
| p) Density                                      | 1,53 g/cm <sup>3</sup> at 25 °C  |
| Relative density                                | No data available  |
| q) Relative vapor density                       | No data available  |
| r) Particle characteristics                     | No data available  |





### 9.2 Other safety information

No data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

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

### 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

Exposure to moisture may affect product quality.

no information available

### 10.5 Incompatible materials

Aluminum, Lead, Iron, Copper, copper compounds

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

## SECTION 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)

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

Symptoms: Possible damages:, mucosal irritations

LD50 Dermal - Rat - male and female - > 2.000 mg/kg

Remarks: (ECHA)

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 24 h





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(Draize Test)

### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Eye irritation

Remarks: (ECHA)

### Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

### Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster lung cells

Metabolic activation: without metabolic activation

Method: OECD Test Guideline 473

Result: positive

Test Type: Micronucleus test

Species: Mouse

Cell type: Bone marrow

Application Route: Intraperitoneal injection

Method: OECD Test Guideline 474

Result: negative

### 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

## 11.2 Additional Information

### Endocrine disrupting properties

#### **Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - male and female - Oral - 90 d - NOAEL (No observed adverse effect level) - 1.695,7 mg/kg

Valerian Labs Inc.

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www.valerianlabs.com

1130-1971 Broadway Street

Port Coquitlam, BC, Canada, V3C 0C9





Remarks: Subchronic toxicity

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

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.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish                      semi-static test LC50 - *Cyprinus carpio* (Carp) - 209,00 mg/l - 96 h  
Remarks: (ECHA)

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

Toxicity to algae                      static test ErC50 - *Chlorella vulgaris* (Fresh water algae) - 1.300 mg/l  
- 5 d  
Remarks: (ECHA)

Toxicity to bacteria                      static test EC50 - activated sludge - 1.310 mg/l - 0,5 h  
(OECD Test Guideline 209)

Toxicity to daphnia                      semi-static test NOEC - *Daphnia magna* (Water flea) - 14,6 mg/l -  
and other aquatic                      21 d  
invertebrates(Chronic                      Remarks: (ECHA)  
toxicity)

### 12.2 Persistence and degradability

The methods for determining the biological degradability 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 Endocrine disrupting properties

**Product:**



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Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

## SECTION 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

No data available

#### Further information

Not classified as dangerous in the meaning of transport regulations.

## SECTION 15: Regulatory information

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

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

#### Authorisations and/or restrictions on use

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)

: ammonium chloride

Valerian Labs Inc.  
1(604)-710-0869  
[www.valerianlabs.com](http://www.valerianlabs.com)  
1130-1971 Broadway Street  
Port Coquitlam, BC, Canada, V3C 0C9





### Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

### 15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance.

## SECTION 16: Other information

### Full text of other abbreviations

These are abbreviations and acronyms commonly used in the field of chemical safety, regulation, and transportation:

1. ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
2. ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
3. AIIC - Australian Inventory of Industrial Chemicals
4. ASTM - American Society for the Testing of Materials
5. bw - Body weight
6. CMR - Carcinogen, Mutagen, or Reproductive Toxicant
7. DIN - Standard of the German Institute for Standardization
8. DSL - Domestic Substances List (Canada)
9. ECx - Concentration associated with x% response
10. ELx - Loading rate associated with x% response
11. EmS - Emergency Schedule
12. ENCS - Existing and New Chemical Substances (Japan)
13. ErCx - Concentration associated with x% growth rate response
14. GHS - Globally Harmonized System
15. GLP - Good Laboratory Practice
16. IARC - International Agency for Research on Cancer
17. IATA - International Air Transport Association
18. IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
19. IC50 - Half maximal inhibitory concentration
20. ICAO - International Civil Aviation Organization
21. IECSC - Inventory of Existing Chemical Substances in China
22. IMDG - International Maritime Dangerous Goods
23. IMO - International Maritime Organization
24. ISHL - Industrial Safety and Health Law (Japan)
25. ISO - International Organization for Standardization
26. KECI - Korea Existing Chemicals Inventory





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27. LC50 - Lethal Concentration to 50% of a test population
28. LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
29. MARPOL - International Convention for the Prevention of Pollution from Ships
30. n.o.s. - Not Otherwise Specified
31. NO(A)EC - No Observed (Adverse) Effect Concentration
32. NO(A)EL - No Observed (Adverse) Effect Level
33. NOELR - No Observable Effect Loading Rate
34. NZIoC - New Zealand Inventory of Chemicals
35. OECD - Organization for Economic Co-operation and Development
36. OPPTS - Office of Chemical Safety and Pollution Prevention
37. PBT - Persistent, Bio accumulative, and Toxic substance
38. PICCS - Philippines Inventory of Chemicals and Chemical Substances
39. (Q)SAR - (Quantitative) Structure Activity Relationship
40. REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals
41. RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
42. SADT - Self-Accelerating Decomposition Temperature
43. SDS - Safety Data Sheet
44. TCSI - Taiwan Chemical Substance Inventory
45. TECI - Thailand Existing Chemicals Inventory
46. TSCA - Toxic Substances Control Act (United States)
47. UN - United Nations
48. UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods
49. vPvB - Very Persistent and Very Bio accumulative

### Additional information

The provided information is considered accurate but is not intended to cover every aspect and should be regarded as a general reference. The content in this document is derived from our current understanding and is relevant to the product concerning the necessary safety measures.

