

00809 SG

## Section 1. Identification

**Product identifier** : 500-NH4-SL (100ppm Ammonium ion standard solution)  
**Product code** : 3200697172,3200700178  
**Other means of identification** : Not available.  
**Product type** : Liquid.

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

<b>Identified uses</b>
Calibration solutions

**Uses advised against**  
 Not applicable.

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## Section 2. Hazards identification

**Classification of the substance or mixture** : Not classified.

GHS label elements, including precautionary statements

**Signal word** : No signal word.  
**Hazard statements** : No known significant effects or critical hazards.  
Precautionary statements  
**General** : Read carefully and follow all instructions. Keep out of reach of children. If medical advice is needed, have product container or label at hand.  
**Prevention** : Avoid release to the environment. Wear protective gloves, protective clothing and eye or face protection.  
**Response** : Collect spillage. Get medical advice/attention.  
**Storage** : Keep cool and protect from sunlight. Store locked up.  
**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Other hazards which do not result in classification** : None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture  
**Other means of identification** : Not available.

Ingredient name	%	Identifiers
ammonium chloride	0.03	CAS: 12125-02-9 EC: 235-186-4
water	99.97	CAS: 7732-18-5 EC: 231-791-2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

**Chemical formula** : Not applicable.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : None known.

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products** : No specific data.

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

## Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
ammonium chloride	<b>Workplace Safety and Health Act (Singapore, 6/2024)</b> PEL (long term) 8 hours: 10 mg/m <sup>3</sup> . Form: Fume. PEL (short term) 15 minutes: 20 mg/m <sup>3</sup> . Form: Fume.

#### Biological exposure indices

No exposure indices known.

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

#### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

- Physical state** : Liquid.
- Color** : Colorless.
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Boiling point or initial boiling point and boiling range** : Not available.
- Flash point** : Not available.
- Evaporation rate** : Not available.
- Flammability** : Not available.
- Lower and upper explosion limit/flammability limit** : Not available.
- Vapor pressure** : Not available.
- Relative vapor density** : Not available.
- Relative density** : Not available.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not applicable.
- Auto-ignition temperature** :

Ingredient name	°C	°F	Method
ammonium chloride	>400	>752	EU A.16

- Decomposition temperature** : Not available.
- Viscosity** : Dynamic (room temperature): Not available.  
Kinematic (room temperature): Not available.  
Kinematic (40°C (104°F)): Not available.

### Particle characteristics

- Median particle size** : Not applicable.

## Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 10. Stability and reactivity

**SADT** : Not available.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

**Product/ingredient name**

ammonium chloride

**Result**

**Rat - Oral - LD50**  
1650 mg/kg

**Conclusion/Summary [Product]** : Not available.

#### Skin corrosion/irritation

Not available.

**Conclusion/Summary [Product]** : Not available.

#### Serious eye damage/eye irritation

**Product/ingredient name**

ammonium chloride

**Result**

**Rabbit - Eyes - Mild irritant**  
Duration of treatment/exposure: 24 hours  
Amount/concentration applied: 500 mg  
**Rabbit - Eyes - Severe irritant**  
Amount/concentration applied: 100 mg

**Conclusion/Summary [Product]** : Not available.

#### Respiratory corrosion/irritation

Not available.

**Conclusion/Summary [Product]** : Not available.

#### Respiratory or skin sensitization

Not available.

#### **Skin**

**Conclusion/Summary [Product]** : Not available.

#### **Respiratory**

**Conclusion/Summary [Product]** : Not available.

#### Germ cell mutagenicity

Not available.

**Conclusion/Summary [Product]** : Not available.

#### Carcinogenicity

Not available.

**Conclusion/Summary [Product]** : Not available.

## Section 11. Toxicological information

### Reproductive toxicity

Not available.

**Conclusion/Summary [Product]** : Not available.

### Specific target organ toxicity (single exposure)

<b>Product/ingredient name</b>	<b>Result</b>
ammonium chloride	

### Specific target organ toxicity (repeated exposure)

<b>Product/ingredient name</b>	<b>Result</b>
ammonium chloride	

### Aspiration hazard

Not available.

### Information on the likely routes of exposure

Not available.

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No specific data.  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### **Short term exposure**

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### **Long term exposure**

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

**Conclusion/Summary [Product]** : Not available.

**General** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.

## Section 11. Toxicological information

**Reproductive toxicity** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
ammonium chloride	1650	N/A	N/A	N/A	N/A

## Section 12. Ecological information

### Toxicity

#### Product/ingredient name

ammonium chloride

#### Result

##### **Acute - LC50 - Fresh water**

Fish - Rainbow trout, donaldson trout - *Oncorhynchus mykiss*  
80 µg/l [96 hours]

Effect: Mortality

##### **Acute - LC50 - Fresh water**

Crustaceans - Giant river prawn - *Macrobrachium rosenbergii* -  
Post-larvae

Size: 9.6 mm; Weight: 12.9 mg

20 µg/l [48 hours]

Effect: Mortality

##### **Chronic - NOEC - Fresh water**

Fish - Channel catfish - *Ictalurus punctatus* - Fry

Age: 10 weeks

0.006 mg/l [30 days]

Effect: Mortality

##### **Acute - EC50 - Marine water**

Algae - Neptune's Necklace - *Hormosira banksii* - Gamete

0.07 mg/l [72 hours]

Effect: Reproduction

##### **Chronic - NOEC - Marine water**

Algae - Algae - *Entomoneis punctulata* - Exponential growth phase

0.6 mg/l [72 hours]

Effect: Population

##### **Chronic - EC10 - Fresh water**

Daphnia - Water flea - *Daphnia obtusa*

Age: <24 hours

0.03 mg/l [21 days]

Effect: Reproduction

**Conclusion/Summary [Product]** : Not available.

### Persistence and degradability

Not available.

**Conclusion/Summary [Product]** : Not available.

### Bioaccumulative potential

## Section 12. Ecological information

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Ammonium chloride	-	-	-

### Mobility in soil

**Soil/Water partition coefficient** : Not available.

### Other adverse effects

No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	UN	IMDG	IATA	ADR/RID	ADN
<b>UN number</b>	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
<b>UN proper shipping name</b>	-	-	-	-	-
<b>Transport hazard class (es)</b>	-	-	-	-	-
<b>Packing group</b>	-	-	-	-	-
<b>Environmental hazards</b>	No.	No.	No.	No.	No.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not available.

## Section 15. Regulatory information

### Singapore - hazardous chemicals under government control

None.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

List name	Ingredient name	Status
Not listed.		

#### Montreal Protocol

Ingredient name	Status
Not listed.	

#### Stockholm Convention on Persistent Organic Pollutants

List name	Ingredient name	Status
Not listed.		

#### Rotterdam Convention on Prior Informed Consent (PIC)

List name	Ingredient name	Status
Not listed.		

#### UNECE Aarhus Protocol on POPs and Heavy Metals

List name	Ingredient name	Status
Not listed.		

## Section 16. Other information

### History

**Date of issue/Date of revision** : 11/10/2025

**Date of previous issue** : 6/2/2021

### Key to abbreviations

: ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway  
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
 ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 IMO = International Maritime Organization  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 N/A = Not available  
 RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
 SGG = Segregation Group  
 UN = United Nations

### Procedure used to derive the classification

Not classified.

**References** : Not available.

✔ Indicates information that has changed from previously issued version.

## Section 16. Other information

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.