

Australian statement of hazardous nature : Classified as hazardous according to criteria of Safe Work Australia

## Section 1 - Identification

**Product Name** Ammonia - Ammonium chloride Buffer

|                                |  |
|--------------------------------|--|
| <b>Product Code</b>            | <b>ROA0829</b>   |
| <b>Address</b>                 | ThermoFisher Scientific Australia Pty Ltd<br>5 Caribbean Drive, Scoresby<br>VICTORIA 3179, Australia |
| <b>Emergency Tel.</b>          | <b>CHEMTREC®</b><br><b>03 9757 4559 or +613 9757 4559</b>  |
| <b>Telephone / Fax Numbers</b> | Tel: 1300 735 292<br>Fax: 1800 067 639   |
| <b>E-mail address</b>          | ANZinfo@thermofisher.com   |

**Recommended Use** Laboratory chemicals.

**Uses advised against** This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list. This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

## Section 2 - Hazard(s) Identification

### Classification under Safe Work Australia

Classified as hazardous according to criteria of Safe Work Australia

#### Physical hazards

No hazards identified

#### Health hazards

Skin Corrosion/Irritation  
Serious Eye Damage/Eye Irritation

Category 1 B  
Category 1

#### Environmental hazards

No hazards identified

### Label Elements



Corrosion

**Signal Word**

**Danger**

**Hazard Statements**

H314 - Causes severe skin burns and eye damage

**Precautionary Statements**

P264 - Wash face, hands and any exposed skin thoroughly after handling  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a POISON CENTER or doctor  
P363 - Wash contaminated clothing before reuse  
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
P501 - Dispose of contents/ container to an approved waste disposal plant

**Other information**

This product does not contain any known or suspected endocrine disruptors

## Section 3 - Composition and Information on Ingredients

| Component          | CAS No     | Weight % |
|--------------------|------------|----------|
| Water              | 7732-18-5  | 80       |
| Ammonium hydroxide | 1336-21-6  | 14       |
| Ammonium chloride  | 12125-02-9 | 6.8      |

## Section 4 - First Aid Measures

|  |   |
|--|---|
| <b>Inhalation</b>                          | Remove to fresh air.  |
| <b>Ingestion</b>                           | Clean mouth with water and drink afterwards plenty of water.  |
| <b>Skin Contact</b>                        | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.   |
| <b>Eye Contact</b>                         | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.  |
| <b>Self-Protection of the First Aider</b>  | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.  |
| <b>First Aid Facilities</b>                | Eyewash, safety shower and washroom.  |
| <b>Most important symptoms and effects</b> | Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| <b>Notes to Physician</b>                  | Treat symptomatically.  |

## Section 5 - Fire Fighting Measures

#### **Suitable Extinguishing Media**

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

#### **Extinguishing media which must not be used for safety reasons**

No information available.

#### **Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors.

#### **Special protective equipment and precautions for fire fighters**

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

## **Section 6 - Accidental Release Measures**

#### **Emergency procedures**

Ensure adequate ventilation.

#### **Environmental Precautions**

See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.

#### **Methods for Containment and Clean Up**

##### **Clean-up methods - small spillage**

##### **Clean-up methods - large spillage**

Typically only supplied in small quantities as packaged goods.

If extremely toxic or used in larger quantities ensure a spillage action plan is in place. Evacuate area. Control the source and/or contain the spill if safe and able to do so. Use temporary diking, sand bags, dry sand, earth or proprietary booms/absorbent pads if available. Obtain advice on containment, neutralisation and clean-up from local emergency responders.

#### **Reference to Other Sections**

Refer to protective measures listed in Sections 8 and 13.

## **Section 7 - Handling and Storage**

#### **Precautions for Safe Handling**

Ensure adequate ventilation.

#### **Conditions for Safe Storage, Including any Incompatibilities**

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

## **Section 8 - Exposure Controls and Personal Protection**

#### **Exposure limits**

**AUS** - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)]

Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia

**ACGIH** - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.

**UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.

**NZ** - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor

| Component | Australia | New Zealand WEL | ACGIH TLV | The United Kingdom | Germany |
|-----------|-----------|-----------------|-----------|--------------------|---------|
|-----------|-----------|-----------------|-----------|--------------------|---------|

|                   |   |   |   |   |  |
|-------------------|---|---|---|---|--|
| Ammonium chloride | STEL: 20 mg/m <sup>3</sup><br>TWA: 10 mg/m <sup>3</sup> | TWA: 10 mg/m <sup>3</sup><br>STEL: 20 mg/m <sup>3</sup> | TWA: 10 mg/m <sup>3</sup><br>STEL: 20 mg/m <sup>3</sup> | STEL: 20 mg/m <sup>3</sup> 15 min<br>TWA: 10 mg/m <sup>3</sup> 8 hr |  |
|-------------------|---|---|---|---|--|

#### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

#### Exposure Controls

##### Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

#### Personal protective equipment

##### Eye Protection

Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

##### Hand Protection

Protective gloves

| Glove material    | Breakthrough time                 | Glove thickness | AUS/NZ Standard | Glove comments        |
|-------------------|-----------------------------------|-----------------|-----------------|-----------------------|
| Disposable gloves | See manufacturers recommendations | -               | AS/NZS 2161     | (minimum requirement) |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

##### Skin and body protection

Long sleeved clothing

##### Respiratory Protection

Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices (or AUS/NZ equivalent) When RPE is used a face piece Fit Test should be conducted

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

#### Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

## Section 9 - Physical and Chemical Properties

#### Information on basic physical and chemical properties

|                          |                          |                                   |
|--------------------------|--------------------------|-----------------------------------|
| Appearance               | Clear                    |                                   |
| Physical State           | Liquid                   |                                   |
| Odor                     | No information available |                                   |
| Odor Threshold           | No data available        |                                   |
| pH                       | 10                       |                                   |
| Melting Point/Range      | No data available        |                                   |
| Softening Point          | No data available        |                                   |
| Boiling Point/Range      | Not applicable           |                                   |
| Flash Point              | Not applicable           | Method - No information available |
| Evaporation Rate         | No data available        |                                   |
| Flammability (solid,gas) | Not applicable           | Liquid                            |

|  |                          |             |
|--|--------------------------|-------------|
| <b>Explosion Limits</b>                        | No data available        |             |
| <b>Vapor Pressure</b>                          | No data available        |             |
| <b>Vapor Density</b>                           | No data available        | (Air = 1.0) |
| <b>Specific Gravity / Density</b>              | No data available        |             |
| <b>Bulk Density</b>                            | Not applicable           | Liquid      |
| <b>Water Solubility</b>                        | Soluble in water         |             |
| <b>Solubility in other solvents</b>            | No information available |             |
| <b>Partition Coefficient (n-octanol/water)</b> |                          |             |
| <b>Component</b>                               | <b>log Pow</b>           |             |
| Ammonium chloride                              | -4.38                    |             |
| <b>Autoignition Temperature</b>                | No data available        |             |
| <b>Decomposition Temperature</b>               | No data available        |             |
| <b>Viscosity</b>                               | No data available        |             |
| <b>Explosive Properties</b>                    | No information available |             |
| <b>Oxidizing Properties</b>                    | No information available |             |

Other information

## Section 10 - Stability and Reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                       | None known, based on information available |
| <b>Stability</b>                        | Stable under normal conditions.            |
| <b>Conditions to Avoid</b>              | Heat, flames and sparks.                   |
| <b>Incompatible Materials</b>           | None known.                                |
| <b>Hazardous Decomposition Products</b> | None under normal use conditions.          |
| <b>Hazardous Polymerization</b>         | No information available.                  |

## Section 11 - Toxicological Information

**Information on Toxicological Effects**

**Product Information**

|                            |  |
|----------------------------|--|
| <b>(a) acute toxicity;</b> |  |
| Oral                       | Based on available data, the classification criteria are not met |
| Dermal                     | Based on available data, the classification criteria are not met |
| Inhalation                 | Based on available data, the classification criteria are not met |

Toxicology data for the components

| Component          | LD50 Oral              | LD50 Dermal  | LC50 Inhalation |
|--------------------|------------------------|--------------|-----------------|
| Water              | -                      | -            | -               |
| Ammonium hydroxide | LD50 > 350 mg/kg (Rat) |              |                 |
| Ammonium chloride  | 1650 mg/kg ( Rat )     | > 2000 mg/kg |                 |

**(b) skin corrosion/irritation;** Category 1 B

**(c) serious eye damage/irritation;** Category 1

**(d) respiratory or skin sensitization;**  
**Respiratory** No data available  
**Skin** No data available

- (e) germ cell mutagenicity; No data available
- (f) carcinogenicity; No data available  
There are no known carcinogenic chemicals in this product
- (g) reproductive toxicity; No data available
- (h) STOT-single exposure; No data available
- (i) STOT-repeated exposure; No data available  
Target Organs No information available.
- (j) aspiration hazard; No data available

**Symptoms / effects, both acute and delayed** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

## Section 12 - Ecological Information

**Ecotoxicity effects** Contains a substance which is: Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

| Component          | Freshwater Fish   | Water Flea          | Freshwater Algae | Microtox |
|--------------------|---|---------------------|------------------|----------|
| Ammonium hydroxide | 0.53 mg/l LC50 96h<br>0.75 - 3.4 mg/l LC50 96h<br>8.2 mg/L LC50 96h | EC50: 0.66 mg/L/48h | -                | -        |
| Ammonium chloride  | Cyprinus carpio:<br>LC50 = 209 mg/L                                 | EC50 = 202 mg/L/24h | -                | -        |

### Persistence and Degradability

**Persistence** Soluble in water, Persistence is unlikely, based on information available.

**Degradation in sewage treatment plant** Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**Bioaccumulative Potential** Bioaccumulation is unlikely

| Component         | log Pow | Bioconcentration factor (BCF) |
|-------------------|---------|-------------------------------|
| Ammonium chloride | -4.38   | No data available             |

**Mobility** The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility Highly mobile in soils

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

**Ozone Depletion Potential** This product does not contain any known or suspected substance

## Section 13 - Disposal Considerations

**Waste from Residues/Unused Products** Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point.

**Other Information** Chemical wastes should be disposed through a licensed commercial waste collection service. Do not flush to sewer. Waste codes should be assigned by the user based on the

application for which the product was used. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

## Section 14 - Transport Information

### IMDG/IMO

UN-No UN2672  
Proper Shipping Name AMMONIA SOLUTION  
Hazard Class 8  
Packing Group III

| Component                              | IMDG Marine Pollutant  |
|--|--|
| Ammonium hydroxide<br>1336-21-6 ( 14 ) | IMDG regulated marine pollutant (UN2073); IMDG regulated marine pollutant (UN2672); IMDG regulated marine pollutant (UN3318) |

### ADG

UN-No UN2672  
Proper Shipping Name AMMONIA SOLUTION  
Hazard Class 8  
Packing Group III

| Component                              | Hazchem Code |
|--|--------------|
| Ammonium hydroxide<br>1336-21-6 ( 14 ) | 2XE          |

### IATA

UN-No UN2672  
Proper Shipping Name AMMONIA SOLUTION  
Hazard Class 8  
Packing Group III

Environmental hazards No hazards identified  
Special Precautions No special precautions required  
Additional information None known

## Section 15 - Regulatory Information

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

#### National Regulations Australia

See section 8 for national exposure control parameters.

#### Standard for the Uniform Scheduling of Medicines and Poisons

Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons.

| Component                      | Standard for the Uniform Scheduling of Medicines and Poisons  |
|--------------------------------|---|
| Ammonium hydroxide - 1336-21-6 | Schedule 5 listed - in preparations except: in preparations for human internal therapeutic use, in preparations for inhalation when absorbed in an inert solid material, or in preparations containing <=0.5% of free Ammonia<br>Schedule 6 listed - except when included in Schedule 5; in preparations for human internal therapeutic use; in preparations for inhalation when absorbed in an inert solid material, or in preparations containing <=0.5% of Ammonia |

## Australian Industrial Chemicals Introduction Scheme (AICIS)

| Component                      | Australian Industrial Chemicals Introduction Scheme (AICIS) | Additional information |
|--------------------------------|---|------------------------|
| Water - 7732-18-5              | Present   | -                      |
| Ammonium hydroxide - 1336-21-6 | Present   | -                      |
| Ammonium chloride - 12125-02-9 | Present   | -                      |

## Australian - Illicit Drug Precursors/Reagents Substance List

This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

## Chemicals of Security Concern

This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

National pollutant inventory Not applicable

## Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

## International Inventories

| Component          | AICS | NZIoC | EINECS    | ELINCS | TSCA | DSL | NDSL | PICCS | ENCS | ISHL | IECSC | KECL     |
|--------------------|------|-------|-----------|--------|------|-----|------|-------|------|------|-------|----------|
| Water              | X    | X     | 231-791-2 | -      | X    | X   | -    | X     | X    |      | X     | KE-35400 |
| Ammonium hydroxide | X    | X     | 215-647-6 | -      | X    | X   | -    | X     | X    | X    | X     | KE-01688 |
| Ammonium chloride  | X    | X     | 235-186-4 | -      | X    | X   | -    | X     | X    | X    | X     | KE-01645 |

Legend: X - Listed. '-' - Not Listed. KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

## International Regulations

Ozone Depletion Potential This product does not contain any known or suspected substance

Persistent Organic Pollutant This product does not contain any known or suspected substance

Rotterdam Convention (PIC) Not applicable

MARPOL - International Convention for the Prevention of Pollution from Ships

| Component                      | IMDG Marine Pollutant  |
|--------------------------------|--|
| Ammonium hydroxide - 1336-21-6 | IMDG regulated marine pollutant (UN2073); IMDG regulated marine pollutant (UN2672); IMDG regulated marine pollutant (UN3318) |

## Basel convention on the control of transboundary movements of hazardous wastes and their disposal

Not applicable.

| Component | CAS No | OECD HPV | Restriction of Hazardous | Seveso III Directive (2012/18/EC) - | Seveso III Directive (2012/18/EC) - |
|-----------|--------|----------|--------------------------|-------------------------------------|-------------------------------------|
|-----------|--------|----------|--------------------------|-------------------------------------|-------------------------------------|



|                    |            |        | Substances (RoHS) | Qualifying Quantities for Major Accident Notification | Qualifying Quantities for Safety Report Requirements |
|--------------------|------------|--------|-------------------|---|--|
| Water              | 7732-18-5  | Listed | Not applicable    | Not applicable  | Not applicable                                       |
| Ammonium hydroxide | 1336-21-6  | Listed | Not applicable    | Not applicable  | Not applicable                                       |
| Ammonium chloride  | 12125-02-9 | Listed | Not applicable    | Not applicable  | Not applicable                                       |

#### Authorisation/Restrictions according to EU REACH

| Component          | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances   | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|--------------------|---|---|---|
| Ammonium hydroxide | -   | Use restricted. See item 75.<br>(see link for restriction details) Use restricted. See item 65.<br>(see link for restriction details) | -   |
| Ammonium chloride  | -   | Use restricted. See item 75.<br>(see link for restriction details) Use restricted. See item 65.<br>(see link for restriction details) | -   |

<https://echa.europa.eu/substances-restricted-under-reach>

## Section 16 - Other Information

#### Legend

|  |  |
|--|--|
| <b>AICS</b> - Australian Inventory of Chemical Substances  | <b>NZIoC</b> - New Zealand Inventory of Chemicals  |
| <b>TSCA</b> - United States Toxic Substances Control Act Section 8(b) Inventory                      | <b>EINECS/ELINCS</b> - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances |
| <b>DSL/NDL</b> - Canadian Domestic Substances List/Non-Domestic Substances List                      | <b>ENCS</b> - Japanese Existing and New Chemical Substances  |
| <b>IECSC</b> - Chinese Inventory of Existing Chemical Substances                                     | <b>KECL</b> - Korean Existing and Evaluated Chemical Substances  |
| <b>PICCS</b> - Philippines Inventory of Chemicals and Chemical Substances                            | <b>CAS</b> - Chemical Abstracts Service  |
| <b>TWA</b> - Time Weighted Average   | <b>ACGIH</b> - American Conference of Governmental Industrial Hygienists   |
| <b>IARC</b> - International Agency for Research on Cancer  | Predicted No Effect Concentration (PNEC)   |
| <b>ICAO/IATA</b> - International Civil Aviation Organization/International Air Transport Association | <b>IMO/IMDG</b> - International Maritime Organization/International Maritime Dangerous Goods Code                            |
| <b>MARPOL</b> - International Convention for the Prevention of Pollution from Ships                  | <b>ADG</b> - Australian Code for the Transport of Dangerous Goods by Road and Rail   |
| <b>NZS 5433:2020</b> - Transport of Dangerous Goods on Land  | <b>OECD</b> - Organisation for Economic Co-operation and Development   |
| <b>LD50</b> - Lethal Dose 50%  | <b>LC50</b> - Lethal Concentration 50%   |
| <b>EC50</b> - Effective Concentration 50%  | <b>ATE</b> - Acute Toxicity Estimate   |
| <b>WEL</b> - Workplace Exposure Limit  | <b>RPE</b> - Respiratory Protective Equipment  |
| <b>DNEL</b> - Derived No Effect Level  | <b>NOEC</b> - No Observed Effect Concentration   |
| <b>POW</b> - Partition coefficient Octanol:Water   | <b>BCF</b> - Bioconcentration factor   |
| <b>vPvB</b> - very Persistent, very Bioaccumulative  | <b>PBT</b> - Persistent, Bioaccumulative, Toxic  |
| <b>VOC</b> - (Volatile Organic Compound)   |  |

#### Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>  
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

#### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

|                              |                       |
|------------------------------|-----------------------|
| <b>Physical hazards</b>      | On basis of test data |
| <b>Health Hazards</b>        | Calculation method    |
| <b>Environmental hazards</b> | Calculation method    |

#### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

|                         |                       |
|-------------------------|-----------------------|
| <b>Revision Date</b>    | 14-Jul-2023           |
| <b>Revision Summary</b> | Update to GHS format. |

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**This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).**

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**