

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

**1.1 Product identifier**

Product name AMMONIUM HYDROXIDE 25% SOLUTION  
CAS-No. 1336-21-6  
Product code AR1304, EP1304, RP1304

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

Identified uses Chemical for analysis and production.

**1.3 Details of the manufacturer of the safety data sheet**

Manufacturer RCI LABSCAN LIMITED.  
24 Rama 1 Road, Pathumwan, Bangkok 10330 Thailand  
Telephone number (662) 613-7911-4  
Fax number (662) 613-7915

**1.4 Emergency Telephone Number**

Emergency phone (662) 613-7911-4

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

Skin corrosion (Category 1B), H314  
Serious eye damage (Category 1), H318  
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335  
Acute aquatic toxicity (Category 1), H400  
Chronic aquatic toxicity (Category 2), H411  
For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 Label elements**

**Labelling according Regulation (EC) No 1272/2008**

Pictogram



Signal word

Danger

Hazard statement(s)

H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.  
H411 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260 Do not breathe vapours/ spray.  
P264 Wash hand thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

|                    |   |
|--------------------|---|
| P302 + P361 + P354 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.           |
| P304 + P340        | IF INHALED: Remove person to fresh air and keep comfortable for breathing.  |
| P305 + P354 + P338 | IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P316               | Get emergency medical help immediately.   |
| P363               | Wash contaminated clothing before reuse.  |
| P391               | Collect spillage.   |
| P403 + P233        | Store in a well-ventilated place. Keep container tightly closed.  |
| P405               | Store locked up.  |

**2.3 Other hazards** None

### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

Not applicable

#### 3.2 Mixture

##### Ammonium hydroxide solution

Synonyms Ammonia aqueous solution, Ammonia solution, Ammonium hydrate.

|           |           |              |                    |                  |          |
|-----------|-----------|--------------|--------------------|------------------|----------|
| CAS-No    | EC-No     | EC-Index-No  | Formula            | Molecular Weight | Weight % |
| 1336-21-6 | 215-647-6 | 007-001-01-2 | NH <sub>4</sub> OH | 35.05 g/mol      | >25      |

#### Hazardous ingredients according to Regulation (EC) No 1272/2008

| Component   | Concentration | Classification   |
|---|---------------|--|
| <b>Ammonium hydroxide</b>                                       |               |  |
| CAS-No 1336-21-6<br>EC-No 215-647-6<br>EC-Index-No 007-001-01-2 | >25%          | Skin corrosion (Category 1B), H314<br>Serious eye damage (Category 1), H318<br>Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335<br>Acute aquatic toxicity (Category 1), H400<br>Chronic aquatic toxicity (Category 2), H411 |

#### Water

Synonyms Dihydrogen oxide

|           |       |             |                  |                  |          |
|-----------|-------|-------------|------------------|------------------|----------|
| CAS-No    | EC-No | EC-Index-No | Formula          | Molecular Weight | Weight % |
| 7732-18-5 | -     | -           | H <sub>2</sub> O | 18.02 g/mol      | <75      |

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

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

|                |   |
|----------------|---|
| General advice | Show this safety data sheet to the doctor in attendance.  |
| Inhalation     | Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus. |
| Skin contact   | Remove contaminated clothing and wash affected skin with soap and water. Obtain medical attention.  |

|             |  |
|-------------|--|
| Eye contact | If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.         |
| Ingestion   | After swallowing: make victim drink water (two glasses at the most), avoid vomiting, risk of perforation. Immediately call in physician. |

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and section 11.

#### 4.3 Indication of any immediate medical attention and special treatment needed

Not Available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

In adaption to materials stored in the immediate neighborhood.

### 5.2 Special hazards arising from the substance or mixture

Non-combustible liquid. Ambient fire may liberate hazardous vapors. The following may develop in event of fire: Nitrogen oxides.

### 5.3 Advice for firefighters

Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

### 5.4 Further information

Contain escaping vapors with water. Prevent fire-fighting water from entering surface water or ground water.

## SECTION 6: Accidental release measures

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

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Wear a positive-pressure supplied-air respirator. Shut off leaks if without risk. Keep people away from and upwind of spill/leak. For personal protective equipment see **Section 8**.

### 6.2 Environmental precautions

Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil, advise police.

### 6.3 Methods and materials for containment and cleaning up

Spillage: soak up with inert absorbent material (e.g. sand, silica gel or chemical absorbent pads). Prevent liquid entering sewers, basements and workpits. Transfer to covered drums. Dispose of promptly

### 6.4 Reference to other sections

For disposal see **Section 13**.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Keep container tightly closed. Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.

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

Keep tightly closed in a dry, cool and well-ventilated place. Keep out of direct sunlight. Recommended storage temperature is below +15 - +25 °C. Handle and open container with care.

**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****8.2 Exposure controls****Appropriate engineering controls**

The product should only be used in ventilation hoods and fans.

**Individual protection measures (Personal protective equipment, PPE)****Eye/face protection**

Goggles giving complete protection to eyes.

**Skin protection**

Chemical resistant apron / flame retardant antistatic protective clothing, heavy duty work shoes.

Handle with gloves

- Full contact wears gloves from butyl rubber material.
- Splash contact wears gloves from nitrile rubber material.

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

**Respiratory protection**

In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter K (EN 141 or EN 14387).

**Environmental exposure controls**

Prevent liquid entering sewers, basements and workpits.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

|   |   |
|---|---|
| Appearance: Form                        | Liquid                                  |
| : Color                                 | Colorless                               |
| Odour                                   | Pungent                                 |
| Odour Threshold                         | Not Available                           |
| pH                                      | 12 at 100 g/l, H <sub>2</sub> O at 20°C |
| Melting point/range                     | -57.5°C                                 |
| Boiling point/range                     | 37.7°C at 1013 hPa                      |
| Flash point                             | Not Available                           |
| Evaporation rate                        | Not Available                           |
| Flammability (solid, gas)               | Not Available                           |
| Explosion limits: lower                 | 15.4 % (V)                              |
| upper                                   | 33.6 % (V)                              |
| Vapor Pressure                          | 483 hPa at 20°C                         |
| Relative Vapor Density                  | Not Available                           |
| Density                                 | 0.903 g/ml at 20°C                      |
| Water solubility                        | Soluble at 20°C                         |
| Partition coefficient (n-octanol/water) | Not Available                           |
| Auto-Ignition temperature               | Not Available                           |

|                           |  |
|---------------------------|--|
| Decomposition Temperature | Not Available  |
| Viscosity                 | Not Available  |
| Explosive properties      | Not Explosive  |
| Oxidizing properties      | The substance or mixture is not classified as oxidizing. |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Not Available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Risk of explosion in contact with: strong acids, oxidizing agent, mercury, silver compounds, halogens and hypochlorites

The substance can react dangerously with: Strong bases, copper, nickel, tin, zinc, iron and acetaldehyde.

### 10.4 Conditions to avoid

Heating.

### 10.5 Incompatible materials

Strong acids, oxidizing agent, mercury, silver compounds, halogens, hypochlorites, strong bases, copper, nickel, tin, zinc, iron and acetaldehyde.

### 10.6 Hazardous decomposition products

Nitrogen oxides (Hazardous decomposition products from under fire condition).

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Mixture

#### Acute toxicity

Not Available

#### Acute oral toxicity

Symptoms: gastric pain, severe burns of the mouth and throat.

#### Acute inhalation toxicity

Symptoms: mucosal irritations, cough, shortness of breath, bronchitis.

#### Skin corrosion/irritation

Severe irritation.

#### Serious eye damage/eye irritation

Not Available

#### Respiratory or skin sensitization

Not Available

#### Germ cell mutagenicity

Not Available

#### Carcinogenicity

Not Available

**Reproductive toxicity**

Not Available

**Teratogenicity**

Not Available

**Specific target organ toxicity (STOT) - single exposure**

May cause respiratory irritation.

**Specific target organ toxicity (STOT) - repeated exposure**

Not Available

**Aspiration hazard**

Not Available

**Further information**

The product should be handled with the care usual when dealing with chemicals.

**SECTION 12: Ecological information****Mixture****12.1 Toxicity**

Not Available

**12.2 Persistence and degradability**

Biodegradability Not Available

**12.3 Bioaccumulative potential**

Partition coefficient (n-octanol/water) Not Available

**12.4 Mobility in soil**

Not Available

**12.5 Other adverse effects**

Very toxic to aquatic life. Do not allow to enter waters, waste water or soil.

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Product**

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

**Contaminated packaging**

Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

**SECTION 14: Transport information****Land Transport (ADR/RID)**

|                              |                  |
|------------------------------|------------------|
| UN Number                    | 2672             |
| UN proper shipping name      | AMMONIA SOLUTION |
| Transport hazard class(es)   | 8                |
| Packing group                | III              |
| Environmental hazards        | Yes              |
| Special precautions for user | Yes              |

**Sea transport (IMDG)**

|                              |                  |
|------------------------------|------------------|
| UN Number                    | 2672             |
| UN proper shipping name      | AMMONIA SOLUTION |
| Transport hazard class(es)   | 8                |
| Packing group                | III              |
| Marine pollutant             | Yes              |
| Special precautions for user | Yes              |
| EmS                          | F-A S-B          |

**Air transport (IATA)**

|                              |                  |
|------------------------------|------------------|
| UN Number                    | 2672             |
| UN proper shipping name      | AMMONIA SOLUTION |
| Transport hazard class(es)   | 8                |
| Packing group                | III              |
| Environmental hazards        | Yes              |
| Special precautions for user | No               |

**River transport (AND/ADNR)**

(Not examined)

**SECTION 15: Regulatory information**

This safety datasheet complies with the requirements of Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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

Not Available

**15.2 Chemical Safety Assessment**

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

**SECTION 16: Other information****Full text of H-Statements referred to under sections 2 and 3**

|      |   |
|------|---|
| H314 | Causes severe skin burns and eye damage.              |
| H335 | May cause respiratory irritation.                     |
| H400 | Very toxic to aquatic life.                           |
| H410 | Very toxic to aquatic life with long lasting effects. |

**Recommended restrictions**

Take notice of labels and safety data sheets for the working.

**Reference**

Globally Harmonized System of Classification and Labelling of Chemicals (GHS).  
Labelling according to EC Directives 67/548 EEC and Regulation (EC) No 1272/2008.

Transportation information according to Recommendations on the Transport of Dangerous Goods, Model Regulations. Twelfth revised edition. United Nations.  
Institute for Occupational Safety and Health of the German Social Accident Insurance in Sankt Augustin/Germany,  
Source: IFA for Databases on hazardous substances (GESTIS).

**Further information**

Contact to RCI Labscan Limited.

**Revision Date**

01/11/2021

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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 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.