

# Safety Data Sheet



## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name:** **AMMONIA - AQUEOUS SOLUTIONS (10% - 35%)**

**Other name(s):** Aqua ammonia; Ammonium hydroxide solution; Ammonium hydrate; Aqua ammonia 12.5%; Aqua ammonia 25%; Aqua ammonia 32%; Ammonia aqueous solution 32%.

**Recommended Use of the Chemical and Restrictions on Use** Textiles, manufacture of rayon, rubber, fertilizers, refrigeration, condensation polymerization, pharmaceuticals, ammonia soaps, lubricants, ink manufacture, explosives, ceramics, detergents, food additives, household cleaners.

**Supplier:** Ixom Operations Pty Ltd  
**ABN:** 51 600 546 512  
**Street Address:** Level 8, 1 Nicholson Street  
East Melbourne Victoria 3002  
Australia

**Telephone Number:** +61 3 9906 3000  
**Emergency Telephone:** **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

## 2. HAZARDS IDENTIFICATION

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

### Classification of the chemical:

Acute Oral Toxicity - Category 4  
Skin Corrosion - Sub-category 1C  
Specific target organ toxicity (single exposure) - Category 3  
Acute Aquatic Toxicity - Category 1

**SIGNAL WORD:** DANGER



### Hazard Statement(s):

H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.  
H400 Very toxic to aquatic life.

### Precautionary Statement(s):

#### Prevention:

P260 Do not breathe mist, vapours, spray.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
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.

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## Response:

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P321 Specific treatment (see First Aid Measures on Safety Data Sheet).  
P363 Wash contaminated clothing before re-use.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 Call a POISON CENTER or doctor/physician 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.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P391 Collect spillage.

## Storage:

P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

## Disposal:

P501 Dispose of contents and container in accordance with local, regional, national, international regulations.

## Other Hazards:

AUH071 Corrosive to the respiratory tract.

**Poisons Schedule (SUSMP):** S6 Poison.

## 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion	Hazard Codes
Water	7732-18-5	65-90%	-
Ammonia, aqueous solution	1336-21-6	10-35%	H314 H400

## 4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

### Inhalation:

Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

### Skin Contact:

If spilt on large areas of skin or hair, immediately drench with running water and remove clothing. Continue to wash skin and hair with plenty of water (and soap if material is insoluble) until advised to stop by the Poisons Information Centre or a doctor.

### Eye Contact:

Immediately wash in and around the eye area with large amounts of water for at least 15 minutes. Eyelids to be held apart. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport promptly to hospital or medical centre.

### Ingestion:

Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Never give anything by the mouth to an unconscious patient. Seek immediate medical assistance.

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## Indication of immediate medical attention and special treatment needed:

Treat symptomatically. Can cause corneal burns. Following severe exposure, the patient should be kept under medical supervision for at least 48 hours.

## 5. FIRE FIGHTING MEASURES

### Suitable Extinguishing Media:

Not combustible, however, if material is involved in a fire use: Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

**Hazchem or Emergency Action Code:** 2R

### Specific hazards arising from the chemical:

Non-combustible material. May form flammable vapour mixtures with air. Avoid all ignition sources. Caution should be exercised when opening storage containers or vessels. Flammable concentrations of ammonia gas can accumulate in the head space. Environmentally hazardous.

### Special protective equipment and precautions for fire-fighters:

Ammonia: The main products of combustion in air, at or above 780 °C, are nitrogen and water with small amounts of nitrogen dioxide and ammonium nitrate. Ammonia decomposes into flammable hydrogen gas at approximately 450 °C. May form flammable mixtures in air. The presence of oil or other combustible material will increase the fire hazard. Fatalities have occurred as a result of the explosive nature of the ammonia gas. If involved in a fire, keep containers cool with water spray. If safe to do so, remove containers from path of fire. Fire-fighters to wear full body protective clothing and self-contained breathing apparatus. Consider evacuation.

## 6. ACCIDENTAL RELEASE MEASURES

### Emergency procedures/Environmental precautions:

Clear area of all unprotected personnel. Do not allow container or product to get into drains, sewers, streams or ponds. If contamination of sewers or waterways has occurred advise local emergency services.

### Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:

Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. Neutralise residues with dilute acid.

## 7. HANDLING AND STORAGE

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

### Precautions for safe handling:

Avoid skin and eye contact and breathing in vapour, mists and aerosols. Keep out of reach of children. When using do not eat, drink or smoke. Wash hands thoroughly after handling.

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

Store in a cool, dry, well ventilated place. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for leaks.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Control Parameters:** No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for constituent(s):

Ammonia: 8hr TWA = 17 mg/m<sup>3</sup> (25 ppm), 15 min STEL = 24 mg/m<sup>3</sup> (35 ppm)

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

STEL (Short Term Exposure Limit) - the airborne concentration of a particular substance calculated as a time-weighted average over 15 minutes, which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

## Appropriate engineering controls:

Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Workplace Exposure Standards. Keep containers closed when not in use.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

## Individual protection measures, such as Personal Protective Equipment (PPE):

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, CHEMICAL GOGGLES, RUBBER BOOTS, AIR MASK , GLOVES (Long), APRON.

\* Not required if wearing air supplied mask.



Wear overalls, chemical goggles, full face shield, elbow-length impervious gloves, splash apron or equivalent chemical impervious outer garment, and rubber boots. Use with adequate ventilation. If determined by a risk assessment an inhalation risk exists, wear an air-supplied mask meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid  
**Colour:** Colourless

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<b>Odour:</b>	Sharp , Irritating
<b>Odour Threshold:</b>	0.6-53 ppm (detection); 0.7-55 ppm (recognition).
<b>Solubility:</b>	Miscible in water.
<b>Specific Gravity:</b>	0.88-0.92 @20°C
<b>Relative Vapour Density (air=1):</b>	0.6
<b>Vapour Pressure (20 °C):</b>	6.9-10.5 psi
<b>Flash Point (°C):</b>	Not applicable
<b>Flammability Limits (%):</b>	16-25
<b>Autoignition Temperature (°C):</b>	Not applicable
<b>% Volatile by Volume:</b>	100
<b>Boiling Point/Range (°C):</b>	18-37
<b>pH:</b>	11.7 (1% aqueous solution)

## 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Reacts violently with acids.
<b>Chemical stability:</b>	May form explosive compounds with mercury, halogens, and hypochlorites. Reacts exothermically with strong mineral acids .
<b>Possibility of hazardous reactions:</b>	Corrosive to copper , nickel , tin , zinc , and their alloys , iron .
<b>Conditions to avoid:</b>	Avoid exposure to heat. Avoid exposure to light.
<b>Incompatible materials:</b>	Incompatible with peroxides , metal salts , acids , reducing agents , some metals .
<b>Hazardous decomposition products:</b>	Hydrogen. Oxides of nitrogen.

## 11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

<b>Ingestion:</b>	Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract.
<b>Eye contact:</b>	A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury.
<b>Skin contact:</b>	Contact with skin will result in severe irritation. Corrosive to skin - may cause skin burns.
<b>Inhalation:</b>	Breathing in mists or aerosols will produce respiratory irritation. Inhalation of high concentrations may result in shortness of breath, chest pain, severe headache and lung damage including pulmonary oedema. Effects may be delayed.
<b>Acute toxicity:</b> Oral LD50 (rat): 350 mg/kg (1)	
<b>Respiratory or skin sensitisation:</b>	No information available.
<b>Chronic effects:</b>	Chronic exposure to ammonia may cause chemical pneumonitis and kidney damage.

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<b>Mutagenicity:</b>	No information available.
<b>Carcinogenicity:</b>	Not listed as carcinogenic according to the International Agency for Research on Cancer (IARC).
<b>Reproductive toxicity:</b>	No information available.
<b>Specific Target Organ Toxicity (STOT) - single exposure:</b>	May cause respiratory irritation.
<b>Specific Target Organ Toxicity (STOT) - repeated exposure:</b>	No information available.
<b>Aspiration hazard:</b>	No information available.

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Avoid contaminating waterways.
<b>Persistence/degradability:</b>	The material is biodegradable.
<b>Bioaccumulative potential:</b>	Does not bioaccumulate.
<b>Aquatic toxicity:</b>	Toxic to aquatic organisms.
48hr LC50 (Daphnia magna):	0.66 mg/L
96hr LC50 (rainbow trout):	0.53 mg/L (for ammonia) (2)

## 13. DISPOSAL CONSIDERATIONS

### Disposal methods:

Refer to Waste Management Authority. Dispose of contents and container in accordance with local, regional, national, international regulations.

## 14. TRANSPORT INFORMATION

### Road and Rail Transport

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.



<b>UN No:</b>	2672
<b>Transport Hazard Class:</b>	8 Corrosive
<b>Packing Group:</b>	III
<b>Proper Shipping Name or Technical Name:</b>	AMMONIA SOLUTION
<b>Hazchem or Emergency Action Code:</b>	2R

### Marine Transport

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

<b>UN No:</b>	2672
<b>Transport Hazard Class:</b>	8 Corrosive
<b>Packing Group:</b>	III

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**Proper Shipping Name or Technical Name:** AMMONIA SOLUTION

**IMDG EMS Fire:** F-A  
**IMDG EMS Spill:** S-B

## **Air Transport**

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

**UN No:** 2672  
**Transport Hazard Class:** 8 Corrosive  
**Packing Group:** III  
**Proper Shipping Name or Technical Name:** AMMONIA SOLUTION

## **15. REGULATORY INFORMATION**

### **Classification:**

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

### **Classification of the chemical:**

Acute Oral Toxicity - Category 4  
Skin Corrosion - Sub-category 1C  
Specific target organ toxicity (single exposure) - Category 3  
Acute Aquatic Toxicity - Category 1

### **Hazard Statement(s):**

H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.  
H400 Very toxic to aquatic life.

**Poisons Schedule (SUSMP):** S6 Poison.

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

## **16. OTHER INFORMATION**

- (1) 'Registry of Toxic Effects of Chemical Substances'. Ed. D. Sweet, US Dept. of Health & Human Services: Cincinnati, 2019.
- (2) In: 'The Dictionary of Substances and their Effects'. Ed. Gangolli S. Royal Society of Chemistry, 1999.

This safety data sheet has been prepared by Ixom Operations Pty Ltd (Toxicology & SDS Services).

### **Reason(s) for Issue:**

5 Yearly Revised Primary SDS  
Change in Hazardous Chemical Classification  
Update in Toxicological Information  
Change in Handling & Storage Requirements  
Change in Stability and Reactivity

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This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.