

## Safety Data Sheet AMMONIA SOLUTION 10-32%

SDS no. HD3ALMXT • Version 1.0 • Date of issue: 2024-09-15

### SECTION 1: Identification

#### GHS Product identifier

Product name AMMONIA SOLUTION 10-32%

#### Other means of identification

Product Product Code

AMMONIA SOLUTION 30% AR AA005

AMMONIA SOLUTION 25% TG AT007

Ammonium hydroxide, Aqua ammonia,  
Ammonia, aqueous solution

AMMONIA SOLUTION 10% TG AT148

AMMONIA SOLUTION 25% AR AA007

AMMONIA SOLUTION 25% LR AL007

#### Recommended use of the chemical and restrictions on use

Textiles, manufacture of rayon, rubber, fertilizers, refrigeration, photography, pharmaceuticals, ammonia soaps, lubricants, fireproofing wood, ink manufacture, explosives, ceramics, ammonium compounds, organic synthesis, detergents, food additives, household cleanser and laboratory reagent.

#### Supplier's details

Name ChemSupply Australia Pty Ltd  
Address 38-50 Bedford Street  
5013 Gillman South Australia  
Australia

Telephone 08 8440 2000  
email [www.chemsupply.com.au](http://www.chemsupply.com.au)

#### Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

### SECTION 2: Hazard identification

#### General hazard statement

Dangerous goods of Class 8 (Corrosive) are incompatible in a placard load with any of the following:

Class 1, Class 4.3, Class 5, Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids, Class 7; and are incompatible with food and food packaging in any quantity.

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

### Classification of the substance or mixture

#### GHS classification in accordance with: UN GHS revision 7

- Serious eye damage/eye irritation, Cat. 1
- Skin corrosion/irritation, Cat. 1B
- Acute toxicity, inhalation, Cat. 3
- Acute toxicity, oral, Cat. 4
- Hazardous to the aquatic environment, short-term (acute), Cat. 1

#### GHS label elements, including precautionary statements

##### Pictograms



##### Signal word

**Danger**

##### Hazard statement(s)

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H331	Toxic if inhaled
H400	Very toxic to aquatic life

##### Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
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.
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/doctor/physician
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.
P501	Dispose of contents/container to an approved waste disposal facility

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## SECTION 3: Composition/information on ingredients

### Mixtures

Molecular weight: 35.05

### Components

Component	CAS no.	Concentration
Ammonium hydroxide (10-35% NH <sub>3</sub> ) (EC no.: 215-647-6; Index no.: 007-001-01-2)	1336-21-6	10 - 32 % (weight)
CLASSIFICATIONS: Skin corrosion/irritation, Cat. 1B; Hazardous to the aquatic environment, short-term (acute), Cat. 1; Acute toxicity, inhalation, Cat. 3; Acute toxicity, oral, Cat. 4. HAZARDS: H302 - Harmful if swallowed; H314 - Causes severe skin burns and eye damage; H331 - Toxic if inhaled; H400 - Very toxic to aquatic life. [SCLs/M-factors/ATEs]: STOT SE 3; H335: C ≥ 5 %		

## SECTION 4: First-aid measures

### Description of necessary first-aid measures

General advice	Maintain eyewash fountain and safety shower in work area. Treat symptomatically based on judgement of doctor and individual reactions of the patient. For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.
If inhaled	If inhaled, remove from contaminated area to fresh air immediately, avoid becoming a casualty. Make patient comfortable, keep warm and at rest until fully recovered. If breathing is difficult (or develops a bluish skin discolouration), supply oxygen by a qualified person. Apply artificial respiration with a respiratory medical device if not breathing. Do not use mouth to mouth resuscitation. Immediately medical attention is required.
In case of skin contact	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Remove contaminated clothing and wash before re-use. Seek medical attention.
In case of eye contact	If in eyes wash out immediately with water. Seek medical attention.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

## SECTION 5: Fire-fighting measures

### Suitable extinguishing media

Small fire: Use dry chemical, CO<sub>2</sub> or water spray. If safe to do so, move undamaged containers from fire area.

Large fire: Use dry chemical, CO<sub>2</sub>, foam or water spray - Do not use water jets.

Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.

### Specific hazards arising from the chemical

Hazards from Combustion Products: Oxides of nitrogen.

Material does not burn. Fire or heat will produce irritating, poisonous and/or corrosive gases. Containers may explode when heated.

Contact with metals may evolve flammable hydrogen gas.

NOTE: Ammonia is not readily ignited, but explosions of air-ammonia mixtures have occurred in confined spaces.

### Special protective actions for fire-fighters

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Wear SCBA and chemical splash suit. Fully-encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Evacuate the area of all non-essential personnel. Avoid inhalation, contact with skin, eyes and clothing.

Wear protective clothing specified for normal operations (see Section 8)

### Methods and materials for containment and cleaning up

ELIMINATE all ignition sources (no smoking, flares, sparks or flames) within at least 50m. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Cover with DRY earth, sand or other non-combustible material followed by plastic sheet to minimize spreading or contact with rain. DO NOT GET WATER INSIDE CONTAINERS.

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## SECTION 7: Handling and storage

### Precautions for safe handling

Do not breathe vapour. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure.

Open containers slowly to prevent spurting.

### Conditions for safe storage, including any incompatibilities

Store in cool place and out of direct sunlight. Store in well ventilated area. Store away from sources of heat or ignition. Store away from oxidizing agents. Store away from acids. Keep containers securely sealed and protected against physical damage. Temperature may be exceeded to up to +40 °C for a period of max. 48 hours. Store below +25 °C.

Corrosive to copper, nickel, zinc and tin and their alloys such as brass. Not significantly corrosive to iron and steel.

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## SECTION 8: Exposure controls/personal protection

### Control parameters

#### CAS: 1336-21-6 (EC: 215-647-6)

Ammonium hydroxide (10-35% NH<sub>3</sub>)

AU/SWA (Australia): 35 ppm/24 mg/m<sup>3</sup> STEL inhalation; 25 ppm/17 mg/m<sup>3</sup> TWA inhalation

### Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

### Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

#### Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

**Body protection**

Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: Clean clothing or protective clothing should be worn, preferably with and apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

**Respiratory protection**

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

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**SECTION 9: Physical and chemical properties**

**Basic physical and chemical properties**

Physical state	Liquid
Appearance	Colourless, clear to slightly turbid liquid.
Color	No data available.
Odor	Characteristic, pungent, stinging, irritating odour.
Odor threshold	No data available.
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	18 - 37°C
Flammability	Vapours are combustible.
Lower and upper explosion limit/flammability limit	Flammable Limits - Lower: 16%Flammable Limits - Upper: 25%
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	>12 (14% solution, 20 °C) 11.6 (1N aqueous solution, 25 °C)
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Miscible in water. Solubility in Organic Solvents: Soluble in ethanol and ether.
Partition coefficient n-octanol/water (log value)	Log P(o/w)= -1.38 (anhydrous substance)
Vapor pressure	6.9 - 10.5 psi (20 °C)
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 0.943 - 14% solution 0.91 - 25% solution 0.89 - 30% solution
Relative vapor density	0.6
Particle characteristics	No data available.

**Supplemental information regarding physical hazard classes**

No data available.

**Further safety characteristics (supplemental)**

No data available.

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**SECTION 10: Stability and reactivity**

**Reactivity**

Stable under normal conditions of storage and handling.

Reacts with incompatible materials

**Chemical stability**

Stable under normal pressures and cool temperatures.

**Possibility of hazardous reactions**

Reacts violently in contact with acids and oxidising agents. Reacts violently or forms explosive products in contact with halogens, interhalogens or halides. May form explosive compounds in contact with metal halides, silver compounds or mercury. Can cause ethylene oxide to polymerise explosively.

Hazardous Polymerization: Will not occur.

**Conditions to avoid**

Exposure to heat and light.

**Incompatible materials**

Acids, alkalis (could form ammonia), acrolein antimony hydride/heat, various alloys (zinc, copper), boron, carbon dioxide, chromyl chloride, dimethylsulfate, ethylene oxide, halogens, hydrogen sulfide, halides, hydrogen bromide, hydrochloric acid, hydrogen fluoride, hydrogen peroxide, interhalogens, iodine, metal halides, mercury/water, various metals, metal salts (chromium VI oxide), nitrogen oxides, nitric acid, oxidising agents, oxygen, phosgene, phosphorus oxides, sulfur dioxide, silver compounds (during storage),

**Hazardous decomposition products**

Ammonia, nitrogen oxides.

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**SECTION 11: Toxicological information**

**Information on toxicological effects**

**Acute toxicity**

Ingestion: Harmful if swallowed. Causes severe burns and pain in the throat, chest and abdomen along with mucosal irritations, gastric pain, nausea, coughing, bloody vomiting, dyspnoea, collapse, shock and unconsciousness. Risk of perforation in the oesophagus and stomach.

Inhalation: Toxic if inhaled. May cause severe respiratory tract irritation. Causes irritations of the mucous membranes, coughing and dyspnoea bronchitis, pulmonary oedema. When vapours/aerosols are generated causes strong irritant effect. Brief exposure at 5,000 ppm may cause rapid death due to suffocation or fluid in the lungs.

**Skin corrosion/irritation**

Causes burns, irritations. May cause irritant and caustic effects (dermatitis, necrosis).

Skin corrosion/irritation: Severe irritation (29% solution, rabbit).

**Serious eye damage/irritation**

Eye: Causes burns. Risk of blindness. Vapour may cause irritation. Liquid may cause severe irritation, hemorrhage, swollen eyelids and partial or total blindness.

Serious eye damage/irritation: Severe irritation (29% solution, rabbit).

**Respiratory or skin sensitization**

Respiratory sensitisation: Not classified based on available information.

**Germ cell mutagenicity**

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Germ cell mutagenicity: Not classified based on available information.

Mutagenicity: Not classified based on available information.

### Carcinogenicity

Not classified based on available information.

### Reproductive toxicity

Not classified based on available information.

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

Not classified based on available information.

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

Not classified based on available information.

### Aspiration hazard

No data available.

### Additional information

Chronic Effects: Repeated exposure to gas may cause long-term irritation of the eyes, nose and upper respiratory tract. May cause chemical pneumonitis and kidney damage. Workers repeatedly exposed to ammonia may develop a tolerance to the irritating effects after several weeks.

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Ammonium hydroxide (10-35% NH<sub>3</sub>): From NIH:

cat LDLo oral 750mg/kg (750 mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1289, 1935.

frog LDLo parenteral 2500mg/kg (2500 mg/kg) "Structure et Activite Pharmacodynamique des Medicaments du Systeme Nerveux Vegetatif," Bovet, D., and F. Bovet-Nitti, New York, S. Karger, 1948Vol. -, Pg. 688, 1948.

human LCLo inhalation 5000ppm (5000 mg/kg) "Toxicology of Drugs and Chemicals," Deichmann, W.B., New York, Academic Press, Inc., 1969Vol. -, Pg. 95, 1969.

human LDLo oral 43mg/kg (43 mg/kg) "Toxicology of Drugs and Chemicals," Deichmann, W.B., New York, Academic Press, Inc., 1969Vol. -, Pg. 95, 1969.

human TCLo inhalation 408ppm (408 mg/kg) LUNGS, THORAX, OR RESPIRATION: "FIBROSIS, FOCAL (PNEUMOCONIOSIS)"

LUNGS, THORAX, OR RESPIRATION: ACUTE PULMONARY EDEMA Journal of the Iowa State Medical Society. Vol. 61, Pg. 271, 1971.

mouse LD50 intravenous 91mg/kg (91 mg/kg) BEHAVIORAL: CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD

BEHAVIORAL: COMA

LUNGS, THORAX, OR RESPIRATION: RESPIRATORY STIMULATION Journal of Clinical Investigation. Vol. 37, Pg. 497, 1958.

mouse LDLo subcutaneous 160mg/kg (160 mg/kg) "Structure et Activite Pharmacodynamique des Medicaments du Systeme Nerveux Vegetatif," Bovet, D., and F. Bovet-Nitti, New York, S. Karger, 1948Vol. -, Pg. 688, 1948.

rabbit LDLo intravenous 10mg/kg (10 mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1289, 1935.

rabbit LDLo subcutaneous 200mg/kg (200 mg/kg) "Structure et Activite Pharmacodynamique des Medicaments du Systeme Nerveux Vegetatif," Bovet, D., and F. Bovet-Nitti, New York, S. Karger, 1948Vol. -, Pg. 688, 1948.

rat LD50 oral 350mg/kg (350 mg/kg) GASTROINTESTINAL: OTHER CHANGES

LIVER: OTHER CHANGES

KIDNEY, URETER, AND BLADDER: OTHER CHANGES Journal of Industrial Hygiene and Toxicology. Vol. 23, Pg. 259, 1941

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## SECTION 12: Ecological information

### Toxicity

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Acute Toxicity - Fish: LC50 (Onchorhynchus mykiss): 0.53 mg/l/96 h.

The following applies to ammonium ions in general: biological effects: fish: toxic as from 0.3 mg/l.

Acute Toxicity - Daphnia: EC50 (Daphnia pulicaria): 1.16 mg/l/48 h.

EC50 (Daphnia magna): 24 mg/l/48 h.

Acute Toxicity - Bacteria: EC50 (Photobacterium phosphoreum): 2 mg/l/5 min.

#### Persistence and degradability

Abiotic degradation: slow degradation.

Biologic degradation: not readily degradable.

#### Other adverse effects

Environmental Fate: Behaviour in environmental compartments:

Distribution: log P (o/w): -1.38.

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## SECTION 13: Disposal considerations

#### Disposal methods

#### Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

#### Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

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## SECTION 14: Transport information

#### ADG (Road and Rail)

UN Number: 2672

Class: 8

Packing Group: III

Proper Shipping Name: AMMONIA SOLUTION

#### Hazchem emergency action code (EAC)

2R

#### IMDG

UN Number: 2672

Class: 8

Packing Group: III

EMS Number:

Proper Shipping Name: AMMONIA SOLUTION

#### IATA

UN Number: 2672

Class: 8

Packing Group: III

Proper Shipping Name: AMMONIA SOLUTION

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## SECTION 15: Regulatory information

#### Safety, health and environmental regulations specific for the product in question

#### Australia SUSMP



Poison Schedule: S6

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## **SECTION 16: Other information**

### **Further information/disclaimer**

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

### **Preparation information**

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), [hcis.safeworkaustralia.gov.au](http://hcis.safeworkaustralia.gov.au)

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)