

SAFETY DATA SHEET



Revision date: 08-Aug-2023

Revision Number 7

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

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

Product Code(s) 000031026101

Other means of identification

UN number 2672

Synonyms Aqua ammonia; Ammonium hydroxide solution; Ammonium hydrate; Aqua ammonia 12.5%; Ammonia aqueous solution 12.5%; Aqua ammonia 25%; Ammonia aqueous solution 25%; Aqua ammonia 32%; Ammonia aqueous solution 32%.

Recommended use of the chemical and restrictions on use

Recommended use Textiles, manufacture of rayon, rubber, fertilizers, refrigeration, condensation polymerization, pharmaceuticals, ammonia soaps, lubricants, ink manufacture, explosives, ceramics, detergents, food additives, household cleaners.

Uses advised against No information available

Supplier

Ixom Operations Pty Ltd
ABN: 51 600 546 512
Level 8, 1 Nicholson Street
Melbourne 3000
Australia

Telephone Number: +61 3 9906 3000

Emergency telephone number

Emergency telephone number **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

GHS Classification

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

Corrosive to metals	Category 1
Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Sub-category C
Serious eye damage/eye irritation	Category 1

Specific target organ toxicity (single exposure)	Category 3
Acute aquatic toxicity	Category 1

SIGNAL WORD

Danger

Label elements

Corrosion
Exclamation mark
Environment



Hazard statements

H290 - May be corrosive to metals
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life

Precautionary Statements - Prevention

Keep only in original container
Do not breathe fume, gas, mist, vapours, spray
Wash face, hands and any exposed skin thoroughly after handling
Wash eyes thoroughly after handling.
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Wear protective gloves / protective clothing / eye protection / face protection
Avoid release to the environment

Precautionary Statements - Response

Specific treatment (see First aid on this SDS)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]
Wash contaminated clothing before reuse
Immediately call a POISON CENTER or doctor/physician
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting
Absorb spillage to prevent material damage
Collect spillage

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
Store locked up
Store in corrosive resistant container with a resistant inner liner

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other hazards which do not result in classification

AUH071 - Corrosive to the respiratory tract

General Hazards

Poisons Schedule (SUSMP)

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3. COMPOSITION/INFORMATION ON INGREDIENTSMixture

Chemical name	CAS No.	Weight-%
Water	7732-18-5	65-90
Ammonia, aqueous solution	1336-21-6	10-35

4. FIRST AID MEASURESDescription of first aid measures

General advice For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Show this safety data sheet to the doctor in attendance.

Emergency telephone number

Inhalation Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, (trained personnel should) give oxygen. If breathing is irregular or stopped, administer artificial respiration. Seek immediate medical attention/advice.

Eye contact In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Immediate medical attention is required.

Skin contact Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and wash before reuse. Immediately call a POISON CENTER or doctor/physician.

Ingestion Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

Most important symptoms and effects, both acute and delayed

Symptoms Irritation/Corrosion. May cause redness and tearing of the eyes. Erythema (skin redness). Burning. Coughing and/ or wheezing. Difficulty in breathing.

Indication of any immediate medical attention and special treatment needed

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

5. FIRE FIGHTING MEASURESSuitable Extinguishing Media

Suitable Extinguishing Media Dry chemical, CO₂, water spray or regular foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Corrosive hazard. Wear protective gloves/clothing and eye/face protection. May form explosive mixtures with air. Caution should be exercised when opening storage containers or vessels. Flammable concentrations of ammonia can accumulate in the vapour space of

storage containers/vessels.

Special protective actions for fire-fighters

Special protective equipment 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.

Hazchem code 2X

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin and eyes. Do not breathe vapor or mist. Do not eat, drink or smoke when using this product. Stop leak if you can do it without risk. Ensure adequate ventilation. Evacuate personnel to safe areas. Do not touch or walk through spilled material. Remove all sources of ignition. Use personal protective equipment as required. Wash thoroughly after handling.

For emergency responders Clear area of all unprotected personnel. Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Dike to collect large liquid spills.

Methods for cleaning up Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes, and clothing. Do not breathe vapor or mist. Do not eat, drink or smoke when using this product. Do not ingest. If swallowed then seek immediate medical assistance. Ensure adequate ventilation. Use personal protection equipment. Wash thoroughly after handling. Keep out of reach of children.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from foodstuffs. Keep container closed when not in use.

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

Incompatible materials Acids. Metal salts. Peroxides. Reducing agents. Some. Metals.

Poisons Schedule (SUSMP) 6

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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

Ammonia: 8hr TWA = 17 mg/m³ (25 ppm), 15 min STEL = 24 mg/m³ (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

Engineering controls Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits.

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

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.

NOTE: Chemical goggles and face shield are not required if wearing an air-supplied mask.



Eye/face protection Tight sealing safety goggles. If splashes are likely to occur: Face protection shield.

Skin and body protection	Chemical resistant apron. Rubber boots. Impervious clothing.
Hand protection	Elbow-length impervious gloves.
Respiratory protection	If determined by a risk assessment an inhalation risk exists, wear an air supplied respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
Environmental exposure controls	Local authorities should be advised if significant spillages cannot be contained.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Color	Colourless
Odor	Sharp , Irritating
Odor threshold	0.6-53 ppm (detection); 0.7-55 ppm (recognition).

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	11.7 (1% aqueous solution)	None known
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	18-37°C	None known
Flash point	Not applicable	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	25%	
Lower flammability or explosive limits	16%	
Vapor pressure	6.9-10.5 psi @20°C	None known
Vapor density	0.6 (air=1)	None known
Relative density	0.88-0.92 @20°C	None known
Water solubility	Miscible in water	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	Not applicable	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

10. STABILITY AND REACTIVITY

Reactivity

Reactivity Reacts violently with acids. May form explosive compounds with mercury, halogens, hypochlorites. Reacts exothermically with strong mineral acids.

Chemical stability

Stability Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions Corrosive to copper, nickel, tin, zinc, and their alloys, iron.

Conditions to avoid

Conditions to avoid Heat. Exposure to light. Do not contaminate food or feed stuffs.

Incompatible materials

Incompatible materials Acids. Metal salts. Peroxides. Reducing agents. Some. Metals.

Hazardous decomposition products

Hazardous decomposition products Hydrogen. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information

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

Inhalation

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.

Eye contact

Causes serious eye damage.

Skin contact

Causes severe burns.

Ingestion

Can burn mouth, throat, and stomach. Harmful if swallowed.

Symptoms

Irritation/Corrosion. May cause redness and tearing of the eyes. Erythema (skin redness). Burning. Coughing and/ or wheezing. Difficulty in breathing.

Numerical measures of toxicity - Product Information

Refer to component information below.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ammonia, aqueous solution	= 350 mg/kg (Rat)	-	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation

Causes severe burns. Classification is based on mixture calculation methods based on component data.

Serious eye damage/eye irritation	Causes serious eye damage. Classification is based on mixture calculation methods based on component data.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	Not listed as carcinogenic according to IARC. (IARC - International Agency for Research on Cancer).
Reproductive toxicity	No information available.
STOT - single exposure	May cause respiratory irritation. Classification is based on mixture calculation methods based on component data.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.
Chronic effects:	Chronic exposure to ammonia may cause chemical pneumonitis and kidney damage.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity Avoid contaminating waterways. Very toxic to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ammonia, aqueous solution	-	LC50: =8.2mg/L (96h, Pimephales promelas)	-	EC50: =0.66mg/L (48h, water flea) EC50: =0.66mg/L (48h, Daphnia pulex)

Persistence and degradability

Persistence and degradability Biodegradable.

Bioaccumulative potential

Bioaccumulation Material does not bioaccumulate.

Mobility

Mobility in soil No information available.

Other adverse effects

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or

disposal.

14. TRANSPORT INFORMATION

ADG

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

UN number	2672
Proper shipping name	AMMONIA SOLUTION
Hazard class	8
Packing group	III
Hazchem code	2X

IATA

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

UN number	2672
UN proper shipping name	AMMONIA SOLUTION
Transport hazard class(es)	8
Packing group	III

IMDG

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

UN number	2672
UN proper shipping name	AMMONIA SOLUTION
Transport hazard class(es)	8
Packing group	III
IMDG EMS Fire	F-A
IMDG EMS Spill	S-B

15. REGULATORY INFORMATION

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

National regulations

Australia

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

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

Poisons Schedule (SUSMP) 6

International Inventories

AIIC All the constituents of this material are listed on the Australian Inventory of Industrial Chemicals.
NZIoC All the constituents of this material are listed on the New Zealand Inventory of Chemicals or are exempt.

Legend:

AIIC- Australian Inventory of Industrial Chemicals

NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. OTHER INFORMATION

Reason(s) For Issue: 5 Yearly Revised Primary SDS

Issuing Date: 08-Aug-2023

This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

Revision Note:

The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGl(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian Industrial Chemicals Introduction Scheme (AICIS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Disclaimer

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.

End of Safety Data Sheet