SAFETY DATA SHEET

Ammonia Aqueous 10-35%

Version: 3
Issue Date: 15/04/2015

Section 1. IDENTIFICATION

Product Name: **Ammonia Aqueous 10-35%**

Other Names: Ammonia Aqua; Ammonia Solution; Ammonia Water; AMMONIUM HYDROXIDE; Ammonium Hydroxide (Nh4oh); Ammonium Liquor; Aqueous Ammonia

Uses: Cleaning compounds; Water treatment; Photographic developer; Manufacture of ammonium compounds.

Chemical Family: No Data Available

Chemical Formula: A mixture of NH3 (and possibly NH4OH) in H2O

Chemical Name: Ammonia Aqueous 10-35%

Product Description: No Data Available

CONTACT DETAILS OF THE SUPPLIER OF THIS SAFETY DATA SHEET

Business: Colonial ChemicalsAustralia

Address: Skewes Road, Bendemeer, NSW, AUSTRALIA,2355

Postal Address: P.O Box 167 Moonbi, NSW,2353

Phone: 02 67 696 658 **Mobile:** 0427 696658 **Fax:** 02 57015137

Email: admin@colonialchemicals.com.au

Web Site: www.colonialchemicals.com.au

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Poisons Information Centre	Westmead NSW	131126 or 1800-251525
Chemcall	Australia	1800-127406

Section 2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) 6

Globally Harmonised System Hazard Classification **Hazardous** according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories
Skin Corrosion/Irritation - Category 1C
Specific Target Organ Toxicity (Single Exposure) - Category 3
Acute Hazard To The Aquatic Environment - Category 1

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Section 2. HAZARD IDENTIFICATION (Continued)

Pictograms

Signal Word Danger

Hazard Statements

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

Precautionary Statements

Prevention	**P260**	Do not breathe dust/fume/gas/mist/vapours/spray.
	P264	Wash face, hands and any exposed skin 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.
Response	**P301 + P330 + P331**	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
	P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
	P363	Wash contaminated clothing before reuse.
	P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position 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/physician.
	P321	Specific treatment (see supplemental first aid instructions on this label).
	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/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code).

Dangerous Goods Classification **Dangerous Goods** according to the criteria of theAustralian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code).

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
WATER	H2O	7732-18-5	65.0 – 90.0%
AMMONIUM HYDROXIDE	Nh4oh	1336-21-6	10.0 – 35.0%

Section 4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed Immediately rinse mouth with water and give plenty of water to drink provided person is conscious. Do NOT induce vomiting. Seek immediate medical attention.

Eye Immediately flush eyes with copious amounts of water holding eyelids open. Seek immediate medical attention. Immediate action is critical to minimize possibility of blindness.

Skin Remove contaminated clothing. Flush affected area with plenty of water. If swelling, redness, blistering or irritation develops, seek immediate medical assistance. Wash clothing before reuse. For skin burns, immediately flood burnt area with plenty of water and cover with a clean dry dressing.

Inhaled Remove victim from 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 breathing laboured ensure airways are clear and administer oxygen. If breathing has stopped apply artificial respiration at once. Seek immediate medical assistance.

Advice to Doctor Treat symptomatically based on judgement of doctor and individual reactions of patient. If exposure has been severe and/or symptoms marked, observation in hospital for 48hours should be considered due to possibility of delayed pulmonary oedema.

Medical Conditions Aggravated by Exposure No information available on medical conditions aggravated by exposure to this product.

Section 5. FIRE FIGHTING MEASURES

General Measures If safe to do so, remove containers from the path of fire.

Flammability Conditions Flammable ammonia gas will be liberated at all temperatures, which can be explosive between 16- 25% in air. Addition to concentrated mineral acids will cause instant boiling and a possible explosion. If involved in a fire, wear self contained breathing apparatus and full protective clothing. Keep containers cool with water spray and if safe to do so remove containers from path of fire.

Extinguishing Media Use water fog (if unavailable water spray), foam, carbon dioxide or dry chemical powder. If involved in a fire, keep containers cool with water spray.

Fire and Explosion Hazard Non combustible material. May form flammable mixtures in air. Avoid all ignition sources.

Hazardous Products of Combustion None known.

Special Fire Fighting Instructions If safe to do so, remove containers from path of fire. Keep containers cool with water spray. Ammonia: The main products of combustion in air, at or above 780 deg C, are nitrogen and water with small amounts of nitrogen dioxide and ammonium nitrate. Ammonia decomposes into flammable hydrogen gas at approximately 450 deg 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.Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas.
Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.

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Section 5. FIRE FIGHTING MEASURES (Continued)

Personal Protective Equipment (SCBA)	Fire fighters should wear a positive-pressure self-contained breathing apparatus and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves), and acid-resistant chemical splash unit.
Flash Point	No Data Available
Lower Explosion Limit	16%
Upper Explosion Limit	25%
Auto Ignition Temperature	780 °C
Hazchem Code	2R

Section 6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Clear area of all unprotected personnel. Work upwind or increase ventilation. Wear proper protective equipment to prevent skin and eye contact and inhalation of vapours. Use water spray to knock down vapours.
Clean Up Procedures	Contain with absorbent material such as sand, earth or other inert material. Prevent from entering drains, sewers, streams or other bodies of water. Carefully neutralise using dilute hydrochloric acid. Use water spray to knock down vapours. Collect and seal in properly labelled containers for disposal.
Containment	Stop leak if safe to do so.
Environmental Precautionary Measures	Do not allow product to reach drains, sewers or waterways. If the product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management Authority.
Evacuation Criteria	Evacuate all unnecessary personnel.
Personal Precautionary Measures	Personnel involved in the cleanup should wear full protective clothing as listed in sect:8.

Section 7. HANDLING AND STORAGE

Handling	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Exercise caution when opening storage containers or vessels. Caution should be exercised when opening storage containers or vessels. Flammable concentrations of ammonia gas can accumulate in the head space. Avoid contact with eyes, skin and clothing. Do not inhale product dust/fumes. Ammonia is considered a pollutant, avoid run off into drains or waterways. Caution, flammable vapours may accumulate in confines spaces. Keep material away from sparks, flames and other ignition sources. Post 'NO SMOKING' signs in area of use. Avoid release of gas into workplace air. Empty containers contain residue which may be hazardous. Transport: Not to be loaded with Class 1, 4.3, 5.1, 5.2, 6*,7, Foodstuff and foodstuff empties. * where the Class 6 substance is a cyanide and the Class 8 substance is an acid.
Storage	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Limit quantity of material in storage. Restrict access to storage area. Post appropriate warning signs. Keep storage area separate from populated work areas. Inspect periodically for deficiencies. Consider leak detection and alarm systems, as required. Store in a cool, dry, well-ventilated area, out of direct sunlight, away from heat and ignition sources. Store away from incompatible materials such as oxidizing materials and strong acids. Structural materials and lighting and ventilation systems in storage area should be corrosion resistant. Store product below 25 degrees C. Protect from damage. This product has a UN classification of 2672 and a Dangerous Goods Class 8 (Corrosive) according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.
Container	Store in original packaging as approved by manufacturer. Container type/packaging must comply with all applicable local legislation.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No exposure standard has been established for this product by the Australian Safety and Compensation Council (ASCC). However, exposure standard for: Ammonia Gas : TWA = 25ppm (17mg/m3) STEL= 35ppm (24mg/m3) NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. These 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 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.
Exposure Limits	No Data Available
Biological Limits	No information available on biological limit values for this product.
Engineering Measures	Ensure ventilation is adequate and that air concentration of ammonia is controlled below exposure standard. This can be achieved via process enclosures, local exhaust ventilation or while wearing respirator or air-supplied mask. Keep containers closed when not in use. A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	RESPIRATOR: If engineering controls and work practices are not effective in controlling exposure to ammonia, then wear suitable personal protective equipment. Have appropriate personal protective equipment available for use in emergencies such as spills or fire. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance, inspection, cleaning and evaluation (AS1715/1716). EYES: Chemical safety goggles. A face shield may be necessary (AS1336/1337). HANDS: Chemical resistant, impervious gloves (AS2161). CLOTHING: Long-sleeved coveralls and safety boots (AS3765/2210).
Work Hygienic Practices	No Data Available.

Section 9. IDENTIFICATION

Physical State	Liquid
Appearance	Liquid
Odour	Pungent, Irritating
Colour	Clear to Slightly Turbid
pH	11.7 1% Aqueous solution
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	37°C
Melting Point	-72°C
Freezing Point	No Data Available
Solubility	Soluble
Specific Gravity	Approx. 0.910
Flash Point	No Data Available
Auto Ignition Temp	780 °C
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	35.05 g/mol

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Section 9. IDENTIFICATION (Continued)

Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	100%
VOC Volume	No Data Available
Additional Characteristics	pH : 11.6 (1.0M)
Potential for Dust Explosion	PRODUCT IS A LIQUID.
Fast or Intensely Burning Characteristics	No Data Available
Flame Propagation or Burning Rate of Solid Materials	No Data Available
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No Data Available
Properties That May Initiate or Contribute to Fire Intensity	No Data Available
Reactions That Release Gases or Vapours	No Data Available
Release of Invisible Flammable Vapours and Gases	No Data Available

Section 10. STABILITY AND REACTIVITY

General Information	Corrosive Liquid.
Chemical Stability	Product is stable under normal conditions of use, storage and temperature. May form explosive compounds with mercury, halogens, and hypochlorites. Reacts exothermically with strong mineral acids.
Conditions to Avoid	Avoid exposure to heat. Avoid exposure to light.
Materials to Avoid	Incompatible with peroxides, metal salts, acids, reducing agents, oxidising agents, metal halides, silver compounds, mercury, halogens and ethylene oxide. Corrosive to aluminum, nickel , tin, zinc and their alloys. Attacks copper, nickel, tin and brass.
Hazardous Decomposition Products	None Known.
Hazardous Polymerisation	Reactivity: May form explosive compounds with mercury, halogens and hypochlorites. Reacts exothermically on contact with strong mineral acids. Reacts violently with acids. Corrosive to copper, nickel and zinc (and their alloys).

Section 11. TOXOCOLOGICAL INFORMATION

General Information	Oral LD50 (rat): 350 mg/kg Inhalation Human TCLO: 408ppm. (400 - 700 ppm causes severe irritation. 2000 - 3000 ppm may be fatal within 30 minutes. 10,000 ppm is immediately fatal). CHRONIC EFFECTS: Chronic exposure to ammonia may cause chemical pneumonitis and kidney damage. Repeated or prolonged exposure may result in bronchitis.
Eye Irritant	Causes burns. Risk of serious eye damage. Highly corrosive - severe irritant. A severe eye irritant and can damage the eyes. Prolonged contact may cause permanent eye damage, which may be followed by blindness.
Ingestion	Extremely corrosive to mouth and throat, burning the mucous membrane. May cause severe abdominal pain, nausea, vomiting and collapse. Death may follow.
Inhalation	Causes burns. Irritating to respiratory system. Corrosive. Inhalation of mists or vapours is extremely irritating to nose, throat and mucous membranes. Inhalation of high vapour concentrations may cause severe breathing difficulties, chest pain and lung damage including pulmonary oedema and maybe death. 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.
Skin Irritant	Causes burns. Highly corrosive. Extremely corrosive to skin and may cause severe burns.
Carcinogen Category	No Data Available

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity	Toxic to aquatic organisms. Fish 96hr LC50 (rainbow trout): 0.53 mg/L (for ammonia)
Persistence/Degradability	Ammonia is readily oxidised to nitrite, which is very toxic to aquatic organisms.
Mobility	No Data Available.
Environmental Fate	Do NOT contaminate waterways.
Bioaccumulation Potential	No Data Available.
Environmental Impact	No Data Available.

Section 13. DISPOSAL CONSIDERATIONS

General Information	Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.
Special Precautions for Land Fill	Contact a specialist disposal company or the local waste regulator for advice. This should be done in accordance with 'The Hazardous Waste Act'.

Section 14. TRANSPORT INFORMATION

Land Transport (Australia):	**ADG Code**
Proper Shipping Name	**AMMONIA SOLUTION** relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	37 Toxic And/Or Corrosive Substances Non-Combustible
UN Number	2672
Hazchem	2R
Pack Group	III
Special Provision	No Data Available

Air	**IATA**
Proper Shipping Name	**AMMONIA SOLUTION** relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	2672
Hazchem	2R
Pack Group	III
Special Provision	No Data Available

Sea	**IMDG**
Proper Shipping Name	**AMMONIA SOLUTION** relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	2672
Hazchem	2R
Pack Group	III
Special Provision	No Data Available
EMS	FA, SB
Marine Pollutant	Yes

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code).

Dangerous Goods Classification **Dangerous Goods** according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code).

Section 15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	6
Australia (AICS)	Listed

Section 16. OTHER INFORMATION

Always use product as directed. Please read all labels carefully before using product.

Further information may be obtained by contacting the Technical Officer on 0267 696 658. Supplied by Colonial Chemicals Australia.

SDS Revision Number:	2
SDS Revision Date:	25 MARCH 2014
Reason for issue:	Updated to SDS (Replaces MSDS dated 12.02.2014 issue 2) PLEASE REPLACE PREVIOUS ISSUES WITH THIS SDS.***

In any event, the review and, if necessary, the re-issue of a SDS shall be no longer than 5 years after the last date of issue.

The information sourced for the preparation of this document was correct and complete at the time or writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the use and storage of this type of product.

Key legend/Abbreviations/Acronyms that may be used in this S.D.S.:

<	Less Than
>	Greater Than
ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)
AICS	Australian Inventory of Chemical Substances
atm	Atmosphere
CAS	Chemical Abstracts Service (Registry Number)
cm²	Square Centimetres
CO2	Carbon Dioxide
COD	Chemical Oxygen Demand
deg C (°C)	Degrees Celcius
deg F (°F)	Degrees Farenheit
EPA (New Zealand)	Environmental Protection Authority of New Zealand
g	Grams
g/cm³	Grams per Cubic Centimetre
g/l	Grams per Litre
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters HSNO Hazardous Substance and New Organism
IDLH	Immediately Dangerous to Life and Health
immiscible	Liquids are insoluable in each other. inHg Inch of Mercury
inH2O	Inch of Water
K	Kelvin
kg	Kilogram
kg/m³	Kilograms per Cubic Metre
lb	Pound
LC	stands for lethal concentration.
LC50	is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD	stands for Lethal Dose.
LD50	is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.
ltr or L	Litre
m³	Cubic Metre
mbar	Millibar
mg	Milligram
mg/24H	Milligrams per 24 Hours
mg/kg	Milligrams per Kilogram
mg/m³	Milligrams per Cubic Metre
Misc or Miscible	Liquids form one homogeneous liquid phase regardless of the amount of either component present
mm	Millimetre
mmH2O	Millimetres of Water
mPa.s	Millipascals per Second
N/A	Not Applicable
NIOSH	National Institute for Occupational Safety and Health
NOHSC	National Occupational Heath and Safety Commission
OECD	Organisation for Economic Co-operation and Development
Oz	Ounce
Pa	Pascal
PEL	Permissible Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppb	Parts per Billion
ppm	Parts per Million
ppm/2h	Parts per Million per 2 Hours
ppm/6h	Parts per Million per 6 Hours
psi	Pounds per Square Inch
R	Rankine
RCP	Reciprocal Calculation Procedure
SDS	Safety Data Sheet

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Section 16. OTHER INFORMATION (Continued)

STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
tne	Tonne
TWA	Time Weighted Average (TWA/ES - Time Weighted Average or Exposure Standard)
Ug/24	Micrograms per 24 Hours
UN	United Nations
Wt	Weight

END OF SDS