



Material Safety Data Sheet

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **AMMONIA - AQUEOUS SOLUTION (25%)**

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

Supplier: STEELMAN GASES PVT LTD

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2. HAZARDS IDENTIFICATION

Classifications of the Product

Skin Corrosion; Category 1B
Acute Toxicity, Inhalation;
Category 3 Acute Aquatic Toxicity;
Category 1

Pictograms



Labels | Signal Word: **Danger**

This material is hazardous according to criteria of ISCC; HAZARDOUS SUBSTANCE.

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

Risk Phrases: Causes burns. Irritating to respiratory system. Risk of serious damage to eyes. Very toxic to aquatic organisms.

Safety Phrases: Do not breathe vapour. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

Poisons Schedule:

S6 Poison.



3. COMPOSITION/INFORMATION ON INGREDIENTS

Components / CAS Number Proportion Risk Phrases

Water

7732-18-5

65-90% -

Ammonia

7664-41-7

10-35% R10 R23 R34 R37 R41 R50

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4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre 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 discoloration 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: If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Ingestion: Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek immediate medical assistance.

Medical attention and special treatment:

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

Hazards from combustion products:

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.

Precautions for fire fighter and special protective equipment:

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 °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.



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 Code: 2R

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures: Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

Methods and materials for containment and clean 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). Neutralise with dilute acid. Collect and seal in properly labelled containers or drums for disposal.

7. HANDLING AND STORAGE

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

Conditions for safe storage: Store in cool place and out of direct sunlight. Store away from foodstuffs. Store away from sources of heat or ignition. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for leaks.

Precautions for safe handling: Avoid skin and eye contact and breathing in vapour, mists and aerosols. Keep out of reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits:

No value assigned for this specific material by the National Occupational Health and Safety Commission. However, 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 the National Occupational Health and Safety Commission.

TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

STEL (Short Term Exposure Limit) - the average airborne concentration over a 15 minute period 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 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.



Engineering controls:

Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards. If inhalation risk exists: Use with local exhaust ventilation or while wearing air supplied mask. Keep containers closed when not in use.

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. Orica Personal Protection Guide No. 1, 1998: J - OVERALLS, RUBBER BOOTS, AIR MASK, GLOVES (Long), APRON.

Wear overalls, full face shield, elbow-length impervious gloves, splash apron and rubber boots. Use with adequate ventilation. If inhalation risk exists, wear 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	: Colorless
Odour	: Sharp, Irritating
Odour Threshold	: 0.6-53 ppm (detection); 0.7-55 ppm (recognition).
Solubility	: Miscible in water.
Specific Gravity	: 0.89-0.92 @20°C
Relative Vapour Density (air=1)	: 0.6
Vapour Pressure (20 °C)	: 6.9-10.5 psi
Flash Point (°C)	: Not applicable
Flammability Limits (%)	: 16-25
Auto ignition Temperature (°C)	: Not applicable
% Volatile by Volume	: 100
Boiling Point/Range (°C)	: 18-37
Ph	: 11.7 (1% aqueous solution)

10. STABILITY AND REACTIVITY

Chemical stability: 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.

Incompatible materials: Incompatible with peroxides, metal salts, acids, and reducing agents.

Hazardous

decomposition products:

None known.

Hazardous reactions: Corrosive to copper, nickel, tin, and zinc.



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:

Ingestion: Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract.

Eye contact: A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury.

Skin contact: Contact with skin will result in severe irritation. Corrosive to skin - may cause skin burns. **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.

Long Term Effects:

Chronic exposure to ammonia may cause chemical pneumonitis and kidney damage.

Toxicological Data:

Oral LD50 (rat): 350 mg/kg. (1)

Inhalation LC50 (rat): 2000 ppm/4hr (1)

12. ECOLOGICAL INFORMATION

Ecotoxicity Avoid contaminating waterways.

Aquatic toxicity:

Toxic to aquatic organisms. 96hr LC50 (rainbow trout): 0.53 mg/L (for ammonia). (2)

13. DISPOSAL CONSIDERATIONS

Disposal methods: Refer to Waste Management Authority. Dispose of material through a licensed waste contractor. Decontamination and destruction of containers should be considered.

14. TRANSPORT INFORMATION

Road and Rail Transport

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

UN No: 2672

Class-primary 8 Corrosive

Packing Group: III

Proper Shipping Name: AMMONIA SOLUTION

Hazchem Code: 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.

UN No: 2672

Class-primary: 8 Corrosive

Packing Group: III

Proper Shipping Name: AMMONIA SOLUTION

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

Class-primary: 8 Corrosive

Packing Group: III

Proper Shipping Name: AMMONIA SOLUTION



15. REGULATORY INFORMATION

Classification: This material is hazardous according to criteria of ASCC; HAZARDOUS SUBSTANCE.

Hazard Category: C: Corrosive

Risk Phrase(s): R34: Causes burns. R37: Irritating to respiratory system.

R41: Risk of serious damage to eyes. R50: Very toxic to aquatic organisms.

Safety Phrase(s): S23: Do not breathe vapour/mist/aerosol. S24/25: Avoid contact with skin and eyes.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

Poisons Schedule: S6 Poison.

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

16. OTHER INFORMATION

Synonyms/Common Names: Ammonium Hydroxide; Aqueous Ammonia; Aqua Ammonia; Ammonia Solutions

Chemical Family/Type: Inorganic Bases

Sections changed since last revision: MSDS to First Issue SDS Conversion

IMPORTANT! Read this MSDS Before use or disposal of this product. Pass along with information to employees and any other persons who could be exposed to the product to be sure that they are aware of the information before use or other exposure. This MSDS has been prepared according to the OSHA Hazard Communication Standard [29 CFR 1910.1200]. The MSDS information is based on sources believed to be reliable. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, **Steelman Gases Pvt. Ltd.** makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Also, additional information may be necessary or helpful for specific conditions and circumstances of use. It is the user's responsibility to determine the suitability of this product and to evaluate risks prior to use, and then to exercise appropriate precautions of employees and others.