

# Material Safety Data Sheet

## Product Name

Di-Ammonium Phosphate (DAP)

## Section 1 -

### Chemical Product and Company Identification

Product Name	MSDS No.
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Anhydrous Ammonia

0002

Chemical Name	Version No.
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Ammonia

02

Chemical Formula
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NH<sub>3</sub>

Material Use	Next Revision
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Mostly used in the production of fertilizers.  
Also, Ammonia has the following industrial  
Applications: manufacture of chemicals,  
synthetic fibers, cleaning solutions.

September, 2023

Synonyms
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Anhydrous Ammonia, Liquefied Ammonia, Ammonia Anhydrous: both standard & commercial grade.

Company Identification
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Maaden Phosphate Company  
P.O Box 11 10  
Jubail 31961 KSA

## Emergency Contact

+966-13-342-6666

## For Information

+966-3-342-6688  
cc@maaden.com.sa

## Section 2 - Composition, Information on Ingredients

Chemical Name	CAS No.	Percent
Ammonia (NH3)	7664-41-7	99.9

## Section 3 - Physical and Chemical Properties

Physical State	Liquefied gas	Molecular Weight	17.03
Appearance	Colorless gas, liquid under pressure. Mist of high concentration may appear greenish	Solubility	Soluble in water
Odor	Sharp Pungent Odor	Boiling Point	-33.35 oc
pH	Basic (1 1.6)	Melting Point	-77.7 oc
Vapor Pressure (kPa)	10 atm @ 25.7 o c	Vapor Density	0.89 g/l
Viscosity	0.255 centipoise at -28.3 O F (-33.5 O C)	Evaporation Rate	N/A
Bulk Density	620 kg/m3	Specific Gravity	0.682 (liq NH3)

## Section 4 - Hazards Identification

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### Emergency Overview

#### Target Organs

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Lungs

### Potential Health Effects

#### Eye

Irritation to eye, conjunctivitis, swelling of eye lid

#### Skin

Skin irritation

#### Ingestion

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Ingestion is not a likely route

#### Inhalation

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Irritation to nose and throat, coughing, Exposure to very high concentrations of gaseous ammonia can result in lung damage and death

#### Chronic

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Corneal ulcers have been reported following splashing of ammonia water in the eye

#### Others

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Contact with Liquid may cause cold burn/frost bite

## Section 5 - First Aid Measures

<b>Eyes</b>	Immediately flush eyes with plenty of water. Do not rub.
<b>Skin</b>	Get under shower. Remove contaminated clothing and shoes
<b>Ingestion</b>	Drink water or milk. Never give anything to induce vomiting
<b>Inhalation</b>	Remove from exposure to fresh air. If breathing stops give artificial respiration
<b>Antidote</b>	N/A
<b>Notes to Physician</b>	Bronchospasm may be treated with the use of a bronchodilator such as albuterol and an anticholinergic inhalant such as Atrovent.

## Section 6 - Firefighting Measures

<b>Flammability</b>	Flammable
<b>Flammability Limits</b>	LEL: 16%; I-JEL: 25%
<b>Explosion Risk</b>	<ul style="list-style-type: none"> <li>- Explosion hazard in a confined space.</li> <li>- Considered as Class I, Group D</li> <li>- Electrical Hazard</li> </ul>
<b>Auto-Ignition Temperature</b>	651 oc
<b>Flash Point</b>	11 oc
<b>Products of Combustion</b>	Nitrogen (NOx) and water

### Fire Hazard in The Presence of Various Substances

May ignite in the presence of open flames and sparks. The presence of oil or other combustible materials will increase the fire hazard.

### Explosion Hazard in The Presence of Various Substances

Ammonia not readily ignited but a mixture of ammonia and air will explode when ignited under favorable conditions.

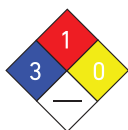
### Fire Fighting Media and Instructions

Stop ammonia leak (if it may be done safely) before extinguishing the fire. Use water spray to cool fire-exposed ammonia containers (do not direct water into spilled ammonia). Move ammonia containers from fire if without risk. Keep a safe distance as the ammonia cylinders may explode.

### Extinguishing Media

- For small fire.....dry chemical or CO2
- For large fire.....water spray, fog, or foam

### NFPA Rating



Health: 3; Flammability: 1;  
Reactivity: 0

## Section 7 - Accidental Release Measures

### General Information

Release may require isolation or evacuation.

### Small Spills

- Stop or control the leak if this can be done without risk.
- Use water to cool and disperse vapors to protect personnel.
- Approach release from upwind

### Large Spills

- Follow same procedure for small spills.
- Refer to the Emergency Response Guidelines.

## Section 8 - Handling and Storage

<b>Handling</b>	<ul style="list-style-type: none"> <li>- Use with adequate ventilation.</li> <li>- Do not breathe gas/vapor.</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>- Cylinders and tanks.</li> <li>- Keep in dry cool and well ventilated area. Ensure facilities are well maintained and emergency response</li> </ul>
<b>Additional Information</b>	Keep away from ignition sources, strong acids and oxidizing agents

## Section 9 - Exposure Controls, Personal Protection

<b>Engineering Controls</b>	Workers must be trained in the safe handling and use of ammonia. Maintain concentrations within exposure guidelines. Process block valves, equipment enclosures and other isolation facilities may be necessary.
<b>Personal Protection</b>	Wear appropriate respiratory protection contact may occur as a result of brief periodic exposures. Wear long sleeved clothing, ammonia resistant coveralls, chemical resistant gloves, and safety or chemical glasses with side Shields face shield, safety boots.
<b>Personal Protection in Case of Large Release</b>	Same as above
<b>Exposure Limits</b>	15 min for gaseous ammonia: 35 ppm 8 hr. TWA: 25 ppm IDLH: 300 ppm

## Section 10 - Personal Protective Equipment

<b>Eyes</b>	Safety goggle, face shield
<b>Skin</b>	Butyl rubber, ammonia resistant coveralls, apron, boots, gloves.
<b>Respirators</b>	Self-contained breathing apparatus (SCBA) or air purifying respirator. Ammonia cartridge can be used if concentration of ammonia is less than 250 ppm.

## Section 11 - Stability and Reactivity

<b>Chemical Stability</b>	Stable. Liquid under pressure floats and boils on water.
<b>Instability Temperature</b>	N/A
<b>Conditions to Avoid</b>	Keep away from ignition sources, strong acids, oxidizing materials and halogens.
<b>Incompatibilities with Other Materials</b>	Reacts with hypochlorite or other halogen sources to form explosive compounds. Highly reactive with oxidizing and reducing agents. Extremely reactive with acids.
<b>Hazardous Decomposition Products</b>	Emits fumes of NO <sub>x</sub> . Produces hydrogen above 450 o c
<b>Hazardous Polymerization</b>	Anhydrous ammonia is stable at room temperature in closed containers under normal storage and handling conditions. Hazardous polymerization cannot occur. Heat, ignition sources, contact with oxidizing agents, combustible materials and incompatibles.
<b>Corrosivity</b>	Highly corrosive to copper and its alloys and any metal surface. Slightly corrosive to aluminum and zinc.
<b>Special Remarks</b>	Same as above.

## Section 12 - Toxicological Information

<b>Significant Route of Exposure</b>	Inhalation, eyes contact, skin contact.
<b>Toxicity to Animals</b>	Very toxic to marine environment
<b>Chronic Effects on Humans</b>	Exposure can cause coughing, chest pains, difficulty in breathing. Repeated significant overexposure can cause permanent lung function damage, edema and chemical pneumonitis. May cause serious damage to the eyes.
<b>Other Effects on Humans</b>	Slightly to very dangerous in case of skin contact, eyes contact, or inhalation. Material may be irritating or corrosive.

## Section 13 - Ecological Information

<b>Eco-toxicity</b>	Hazardous for human and animal life. Ammonia is toxic hazards to fish. Free ammonia concentrations of 2.5 mg per liter at pH 7.4 to 8.5 are considered harmful to marine environment.
<b>Degradation</b>	Not available
<b>Environmental Fate</b>	Not available
<b>Special Remarks</b>	Do not release large amounts of Ammonia to the atmosphere.

## Section 14 - Disposal Considerations

<b>Waste Disposal</b>	Dispose of in a manner consistent with local regulations.
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## Section 15 - Transport Information

<b>DOT/ TDG Classification</b>	DOT Class 2.3: Poisson Gas
	T DG Class 2.3: Toxic Compressed Gas.
<b>Shipping Name</b>	Ammonia, Anhydrous
<b>Hazard Class</b>	2.2
<b>UN Number</b>	UN1005
<b>Packing Group</b>	Not available
<b>Special Provisions</b>	Not available
<b>Additional information</b>	None

## Section 16 - Additional Information

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