

MATERIAL SAFETY DATA SHEET

1. CHEMICAL IDENTITY			
Chemical Name	Ammonia		
Chemical Formula	NH ₃		
Synonyms	Liquid Ammonia, Ammonia Gas		
Chemical Classification	Inorganic Compound		
Trade Name			
CAS No.	7664-41-7		
U N No.	1005		
Regulated Identification			
Shipping Name	Ammonia Anhydrous		
Hazchem Code	2RE		
Codes / Label	2.3 , Toxic gas		
Hazardous Waste ID No.			
Hazardous Ingredient Name	CAS No.		
Ammonia	7664-41- 7		
2. PHYSICAL / CHEMICAL CHARACTERISTICS			
Physical state	Liquid, Gas		
Appearance	Colorless		
Odour	Strong pungent		
Solubility	Very soluble in water, moderately soluble in alcohol		
Specific gravity	0.771		
Ph	11.6 for 1N aqueous solution		
Boiling range / Point	-33.4 °C		
Melting / Freezing point	-77.77 °C		
Vapor Density (Air=1)	0.60		
Vapor pressure at 35°C (mm Hg)	760 mm Hg at 25.7°C		
3. FIRE / EXPLOSION HAZARD DATA			
Flammability: No	LEL 16.0 %	Flash Point (OC) ° C	
TDG Flammability: NA	UEL 25.0 %	Flash Point (CC) ° C	
Auto ignition temperature ° C	651 ° C	Combustible Liquid	Yes
Explosion sensitivity to impact	Stable	Explosive material:	No

Explosion sensitivity to static electricity	Not available	Flammable Material	No
Hazardous Combustion Products	Toxic fumes of NH ₃ and NO _x	Oxidizer:	No
Hazardous Polymerization	Will not occur	Pyrophoric Material	No
		Organic peroxide	No
		Corrosive material	No
		Others:	
4. REACTIVITY DATA			
Chemical Stability			
Incompatibility with other material			
Reactivity	<i>Reacts with AgCl, Silver Nitrate, Chlorine, Bromine, Heavy metals and their compounds</i>		
Hazardous Reaction Products	<i>Reaction with AgCl, Silver Nitrate, Silver Azide and Silver oxide forms explosive mixture</i>		
5. HEALTH HAZARD DATA			
Routes of entry	Inhalation, Eye contact, skin contact		
Effects of Exposure / Symptoms	<i>700 ppm causes eye irritation and permanent injury may result if prompt medical remedial measures are not taken. 5000ppm may cause death from spum inflammation or edema of the larynx. Contact of the liquid with skin freezes the tissues and causes caustic burns.</i>		
Emergency Treatment	<p>Inhalation: Move to fresh air. If not breathing, give artificial respiration</p> <p>Skin: Wash off with water</p> <p>Eyes: Wash eyes with water and seek medical aid</p> <p>Ingestion: Take plenty of water and seek medical aid</p>		
Oral mouse LD50	350 mg/kg of aqueous ammonia		
STEL	35 ppm 27 mg/m ³		
Odour threshold	5 to 50 ppm		
Permissible Exposure Limit (PEL) as per OSHA	50 ppm		
ACGIH Threshold Limit Value(TLV)	25 ppm		

NFPA Hazard Signal					
Health	3	Flammability	1	Reactivity	0
6. PREVENTIVE MEASURES					
Handling & Storage Precautions			<i>Avoid contact with liquid or vapours. Avoid storing along with oxidizing materials and away from all possible sources of ignition. Store in well ventilated flame resistant locations.</i>		
Personal Protective Equipment			<i>Wear rubber boots, safety goggles, self-contained breathing apparatus, gas mask and protective clothing in case of liquid Ammonia</i>		
7. EMERGENCY / FIRST AID MEASURES					
Fire extinguishing media			<i>Stop flow of gas. Use water spray or fog.</i>		
Special procedure			<i>Keep the containers cool by spraying water if exposed to heat or flame</i>		
Unusual Hazards			<i>Gas is suffocating</i>		
Exposure					
First aid measures			<i>Inhalation: Remove the victim to fresh air area; provide artificial respiration or oxygen, if needed. Skin: Remove the contaminated cloths and wash the affected area with plenty of water and soap.</i> <i>Eyes: Flush with plenty of water and seek medical aid.</i>		
Antidotes / Dosages			<i>There are no specific antidotes for ammonia. Wash the affected area with plenty of water and if ammonia is ingested give water or milk.</i>		
Spills					
Steps to be taken			<i>Contain leaking liquid in sand or earth and allow to evaporate. Dilute the vapors with plenty of water</i>		
Waste disposal method			<i>Seal all waste in vapour tight plastic bags for eventual disposal.</i>		
8. ADDITIONAL INFORMATION / REFERENCES					
<i>Difficult to ignite. NH₃ and air in a fire can detonate. Potentially violent or explosive reactions on contact with inter-halogens. Forms sensitive explosive mixture with air and hydrocarbons. Those affected with eye and pulmonary diseases should avoid exposure to ammonia.</i>					
9. MANUFACTURERS / SUPPLIERS DATA					

Name of the firm	Nagarjuna Fertilizers and Chemicals Limited
Contact person in Emergency	
Address	Factory Manager
Telephone / Telefax Nos.	Nagarjuna Road, Kakinada – 533 003 (A.P)
Local Bodies involved	0884 2360356 / 0884 2362084
Standard Packing	
Trem Card Details / Ref	Storage tank / tanker
Other:	

10. Disclaimer

Information contained in this material data sheet is believed to be reliable but not representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is upto the manufacturer/seller to ensure that the information contained in the material safety data sheet is relevant to the product manufactured/handled or sold by him as the case may be.