	LEONID CHEMICALS PVT. LTD., BANGALORE	(CODE) DOCUMENT : WI (CODE) SECTION : WI/SM	
	An ISO-9001:2008 Certified Company	(DATE) : 01.04.2011	Issue : 02
CHEMLABS Quality Our Forte	Quality Assurance Department		Rev.: 00
Title: MATERIAL SAFET	Y DATA SHEET (MSDS): AMMONIUM HYDROXIDE ABT 25 %		1 Pageof1

SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: Ammonium Hydroxide abt 25 %

Catalog Numbers: A047

Synonyms: Ammonium hydrate, ammonia solution, ammonia water.

Company Information: LEONID CHEMICALS Pvt Ltd,

62/A2, 1st Stage,

Yeshvanthpur Industrial Suburb,

Asoka puram School Road,

Bangalore -22, Karnataka, INDIA

Ph-+91-80-23378354

Fax: +918023378354/23377126

SECTION 2- COMPOSITION, INFORMATION ON INGREDIENTS

CAS #	: 1336-21-6
Chemical Name	: Ammonium hydroxide abt 25 % sp.Gr.0.91
%	: 25 – 28 %
EINECS#	: 215-647-6
Hazard Symbols	: None Listed.
Risk Phrases	: None Listed.
SECTION 3- HAZARDS ID	ENTIFICATION
EMERGENCY OVERVIEW	

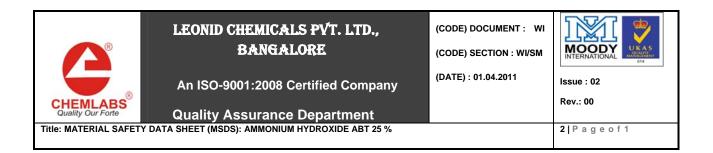
Potential Health Effects

Eye:

Contact with liquid or vapor causes severe burns and possible irreversible eye damage.

Skin:

Causes severe skin irritation. Causes skin burns. May cause deep, penetrating ulcers of the skin.



May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. Causes throat constriction, vomiting, convulsions, and shock.

Inhalation:

Effects may be delayed. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma.

Chronic:

Prolonged inhalation may cause respiratory tract inflammation and lung damage. Chronic ingestion may cause effects similar to those of acute ingestion. Prolonged or repeated exposure may cause corneal damage and the development of cataracts and glaucoma.

SECTION 4 -FIRST AID MEASURES

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin:

Get medical aid immediately. Rinse area with large amounts of water for at least 15 minutes.

Ingestion:

Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation:

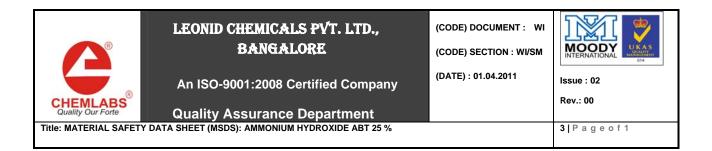
Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Information not available.

SECTION 5- FIRE FIGHTING MEASURES

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Contact with combustible materials may cause a fire.



Extinguishing Media:

For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.

SECTION 6 - ACCIDENTAL RELEASE MEASURES General

Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Neutralize spill with sodium bicarbonate.

SECTION 7 -HANDLING AND STORAGE

Handling:

Wash thoroughly after handling. Use only in a well-ventilated area. Do not get on skin or in eyes. Do not ingest or inhale.

Storage:

Do not store in direct sunlight. Store in a cool, dry, well-ventilated area away from incompatible substances.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protective Equipment

Eyes: Wear safety glasses with side shields.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.



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Quality Our Forte Quality Assurance Department Title: MATERIAL SAFETY DATA SHEET (MSDS): AMMONIUM HYDROXIDE ABT 25 %

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

: Liquid	
: Colorless.	
: Strong ammonia odor.	
: 13.6 at 32°F	
: 237.8 mm Hg	
: Information not available.	
: 82.4° F	
: -106.6 °F/for ammonia	
: 1202°F (650.00°C)	
: Not applicable.	
: 16	
: 25	
: Information not available.	
: Compl <mark>etely soluble in water.</mark>	
: 0.9 at <mark>77°F.</mark>	
: NH₄OH	
: 35.0411	

SECTION 10 -STABILITY AND REACTIVITY

Chemical Stability:

Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid:

High temperatures, incompatible materials.

Incompatibilities with Other Materials:

Acrolein, acrylic acid, chlorosulfonic acid, dimethyl sulfate, fluorine, gold + aqua regia, hydrochloric acid, hydrofluoric acid, iodine, nitric acid, oleum, propiolactone, propylene oxide, silver nitrate, silver oxide, silver oxide + ethyl alcohol, nitromethane, silver permanganate, sulfuric acid, halogens. Forms explosive compounds with many heavy metals and halide salts.

Hazardous Decomposition Products: Nitrogen oxides (NOx) and ammonia (NH3).

Hazardous Polymerization: Has not been reported.

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SECTION 11 - TOXICOLOGICAL INFORMATION

RTECS#:

CAS# 1336-21-6: Bq9625000

LD50/LC50:

CAS# 1336-21-6: Draize test, rabbit, eye: 250 ug Severe; Draize test, rabbit, eye: 44 ug Severe; Oral, rat: LD50 = 350 mg/kg.

Carcinogenicity:

Ammonium hydroxide - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. Other: See actual entry in RTECS for complete information.

SECTION 12 -ECOLOGICAL INFORMATION

Ecotoxicity:

Bluegill LC50=0.024 to 0.093 mg/L/48H Goldfish TLm=2.0 to 2.5 mg/L/24-96H

SECTION 13 -DISPOSAL CONSIDERATIONS

Products which are considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local waste regulator for advice. Empty containers must be decontaminated before returning for recycling.

SECTION 14 -TRANSPORT INFORMATION	
IATA Shipping Name	: AMMONIA SOLUTION
Hazard Class Quality	Our Forte
UN Number	: 2672
Packing Group	: 111
IMO Shipping Name	: AMMONIA SOLUTION
Hazard Class	: 8
UN Number	: 2672

R	LEONID CHEMICALS PVT. LTD., BANGALORE	(CODE) DOCUMENT : WI (CODE) SECTION : WI/SM	
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Packing Group

: 111

RID/ADR

Shipping Name	: AMMONIA SOLUTION	
Hazard Class	: 8	
UN Number	: 2672	
Packing group	: 111	
CAS# 1336-21-6: 1000 lb final RQ; 454 kg final RQ		

SECTION 15 -REGULATORY INFORMATION

European/International Regulations European Labeling in Accordance with EC Directives

Hazard Symbols: No information available.

Risk Phrases: No information available.

Safety Phrases: No information available.

WGK (Water Danger/Protection) CAS# 1336-21-6: 2

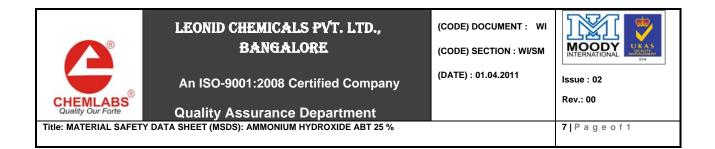
United Kingdom Occupational Exposure Limits No information available.

United Kingdom Maximum Exposure Limits No information available.

Canada CAS# 1336-21-6 is listed on Canada's DSL List. CAS# 1336-21-6 is listed on Canada's Ingredient Disclosure List.

Exposure Limits No information available.

US FEDERAL TSCA CAS# 1336-21-6 is listed on the TSCA inventory.



SECTION 16 - ADDITIONAL INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Leonid Chemicals Pvt. Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Leonid Chemicals Pvt. Ltd. has been advised of the possibility of such damages.





Specification manual - Ammonium solution abt 25%

Mol Wt: 35.04

1114011	
Product	: Ammonium solution abt 25%
Description	: A clear colourless liquid with a strong pungent odour
Cat No	: A047
Cas No	:1336-21-6
Prepared Date	: 07.03.2005
Approved Date	: 07.03.2005

NH₄OH

REVISION HISTORY					
Issue/Rev	Description of Change		Author	Effective Date	
01/00	Initial Release		S. Paul Joshua	07.03.2005	
02/00	Reviewed no changes		S. Paul Joshua	01.04.2011	
Next Review Due : 02.04.2015					
To be reviewed by :		Head-QC/QA			

		Specification
Sl. No.	Tests	LR
1	Assay	25-28%
2	Chloride	0.001%

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance