



**LEONID CHEMICALS PVT. LTD.,  
BANGALORE**

An ISO-9001:2008 Certified Company

**Quality Assurance Department**

(CODE) DOCUMENT : WI

(CODE) SECTION : WI/SM

(DATE) : 01.04.2011



Issue : 02

Rev.: 00

Title: MATERIAL SAFETY DATA SHEET (MSDS): AMMONIA SOLUTION

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## SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: Ammonia solution

Catalog Numbers: A045, A046, A047

Synonyms: Ammonia solution; Ammonia water; Ammonium hydrate

CAS-No. : 1336-21-6

Company Information:

**LEONID CHEMICALS Pvt Ltd,**  
62/A2, 1<sup>st</sup> Stage,  
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## SECTION 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Inhalation (Category 4), H332

Skin corrosion (Category 1B), H314

Acute aquatic toxicity (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

T Toxic R23

C Corrosive R34

N Dangerous for the environment R50

For the full text of the R-phrases mentioned in this Section, see Section 16.

### 2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Signal word Danger

Hazard statement(s)

H314 Causes severe skin burns and eye damage.

H332 Harmful if inhaled.

Precautionary statement(s)

P273 Avoid release to the environment.



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- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- 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.

**Supplemental Hazard Statements** none

According to European Directive 67/548/EEC as amended.

Hazard symbol(s) T Toxic

N Dangerous for the environment

**R-phrase(s)**

- R23 Toxic by inhalation.  
R34 Causes burns.  
R50 Very toxic to aquatic organisms.

**S-phrase(s)**

- 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 where possible).  
S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

2.3 Other hazards - none

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
Ammonia, anhydrous		
CAS-No. 7664-41-7 EC-No. 231-635-3 Index-No. 007-001-00-5	Flam. Gas 2; Press. Gas ; Acute Tox. 3; Skin Corr. 1B; Aquatic Acute 1; H221, H280, H314, H331, H400	25 - 50 %

Hazardous ingredients according to Directive 1999/45/EC



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Component	Classification	Concentration
Ammonia, anhydrous		
CAS-No. 7664-41-7	T, N, R10 - R23 - R34 - R50	25 - 50 %
EC-No. 231-635-3		
Index-No. 007-001-00-5		

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

#### SECTION 4: FIRST AID MEASURES

##### 4.1 Description of first aid measures

###### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

###### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

###### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

###### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

###### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

##### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

##### 4.3 Indication of any immediate medical attention and special treatment needed

no data available

#### SECTION 5: FIREFIGHTING MEASURES

##### 5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### 5.2 Special hazards arising from the substance or mixture nitrogen oxides (NO<sub>x</sub>)



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### 5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

### 5.4 Further information

no data available

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas.

For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

### 7.3 Specific end use(s)

A part from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

Components with workplace control parameters



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## 8.2 Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

### Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- a) Appearance Form : liquid
- b) Odour : no data available
- c) Odour Threshold : no data available



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- d) pH : no data available
- e) Melting point/freezing point : no data available
- f) Initial boiling point and boiling range : no data available
- g) Flash point : not applicable
- h) Evaporation rate : no data available
- i) Flammability (solid, gas) : no data available
- j) Upper/lower flammability or explosive limits : no data available
- k) Vapour pressure : no data available
- l) Vapour density : no data available
- m) Relative density : no data available
- n) Water solubility : no data available
- o) Partition coefficient octanol/water : no data available
- p) Auto-ignition temperature : no data available
- q) Decomposition temperature : no data available
- r) Viscosity : no data available
- s) Explosive properties : no data available
- t) Oxidizing properties : no data available

**9.2 Other safety information**  
no data available

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity



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no data available

#### 10.2 Chemical stability

Stable under recommended storage conditions.

#### 10.3 Possibility of hazardous reactions

no data available

#### 10.4 Conditions to avoid

no data available

#### 10.5 Incompatible materials

no data available

#### 10.6 Hazardous decomposition products

Other decomposition products - no data available

In the event of fire: see section 5

### SECTION 11: TOXICOLOGICAL INFORMATION

#### 11.1 Information on toxicological effects

##### Acute toxicity

no data available

Inhalation: no data available

Inhalation: no data available

##### Skin corrosion/irritation

no data available

##### Serious eye damage/eye irritation

no data available

##### Respiratory or skin sensitisation

no data available

##### Germ cell mutagenicity

no data available

##### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

##### Reproductive toxicity

no data available

##### Specific target organ toxicity - single exposure



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no data available

**Specific target organ toxicity - repeated exposure**

no data available

**Aspiration hazard**

no data available

**Additional Information**

RTECS: Not available

Liver - Irregularities - Based on Human Evidence (Ammonia, anhydrous)

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity

no data available

### 12.2 Persistence and degradability

no data available

### 12.3 Bioaccumulative potential

no data available

### 12.4 Mobility in soil

no data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

Very toxic to aquatic life.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

## SECTION 14: TRANSPORT INFORMATION





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- 14.1 UN number  
ADR/RID: 2672                      IMDG: 2672                      IATA: 2672
- 14.2 UN proper shipping name  
ADR/RID : AMMONIA SOLUTION  
IMDG : AMMONIA SOLUTION  
IATA : Ammonia solution
- 14.3 Transport hazard class(es)  
ADR/RID: 8                      IMDG: 8                      IATA: 8
- 14.4 Packaging group  
ADR/RID: III                      IMDG: III                      IATA: III
- 14.5 Environmental hazards  
ADR/RID: yes                      IMDG Marine pollutant: yes                      IATA: no
- 14.6 Special precautions for user  
no data available

#### SECTION 15: REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
no data available
- 15.2 Chemical Safety Assessment  
For this product a chemical safety assessment was not carried out

#### SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox. Acute toxicity

Aquatic Acute Acute aquatic toxicity

Flam. Gas Flammable gases

H221 Flammable gas.

H280 Contains gas under pressure; may explode if heated.

H314 Causes severe skin burns and eye damage.

H331 Toxic if inhaled.

H332 Harmful if inhaled.

H400 Very toxic to aquatic life.

Press. Gas Gases under pressure



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Skin Corr. Skin corrosion

**Full text of R-phrases referred to under sections 2 and 3**

- N Dangerous for the environment
- R10 Flammable.
- R23 Toxic by inhalation.
- R34 Causes burns.
- T Toxic
- R50 Very toxic to aquatic organisms.

**SECTION 17 - 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.

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**Specification manual - Ammonium solution abt 25%**

**NH<sub>3</sub>**

**Mol Wt: 17.03**

**Product : Ammonium solution abt 25% LR**  
**Description : A clear colourless liquid with a strong pungent odour**  
**Cat No : A046**  
**Cas No : 1336-21-6**  
**Prepared Date : 07.03.2005**  
**Approved Date : 07.03.2005**

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		

Sl. No.	Tests	Specification	Protocol
		LR	
1	Assay	25-28%	2/2/03-A2
2	Chloride	0.001%	2/3.1-09

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

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