

**SAFETY DATA SHEET**

Page : 1 / 5

Revised edition no : 1.0/2010

**Ammonia**

Date : 1/4/2010

**1 IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING**

**Trade name** : Ammonia  
**MSDS No** : VG002  
**Chemical formula** : NH<sub>3</sub>  
**Company identification** : Om Sai Enterprises (Div. of Verma Gases (India) Pvt. Ltd.), Aurangabad  
**Emergency phone** : See paragraph 16 "OTHER INFORMATION"

**2 COMPOSITION / INFORMATION ON INGREDIENTS**

Substance	Name	Contents	CAS No	EC No	Index No	Classification
	Ammonia:	100 %	7664-41-7	231-635-3	007-001-00-5	R10 T; R23 C; R34 N; R50

Contains no other components or impurities which will influence the classification of the product.

**3 HAZARDS IDENTIFICATION**

**Hazards identification** : Liquefied gas.  
Toxic by inhalation.  
Corrosive to eyes, respiratory system and skin.

**4 FIRST AID MEASURES****First aid measures**

**- Inhalation** : Toxic by inhalation.  
Remove victim to uncontaminated area wearing self contained breathing apparatus.  
Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

**- Skin/eye contact** : May cause chemical burns to skin and cornea (with temporary disturbance to vision).  
Immediately flush eyes thoroughly with water for at least 15 minutes.  
Remove contaminated clothing. Drench affected area with water for at least 15 minutes.  
Obtain medical assistance.

**- Ingestion** : Ingestion is not considered a potential route of exposure.

**5 FIRE-FIGHTING MEASURES**


**Flammable class** : Non flammable.  
**Specific hazards** : Exposure to fire may cause containers to rupture/explode.  
**Hazardous combustion products** : If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: Nitric oxide/nitrogen dioxide.

**Extinguishing media**

**- Suitable extinguishing media** : All known extinguishants can be used.  
**Specific methods** : If possible, stop flow of product.  
Move away from the container and cool with water from a protected position.

**Special protective equipment for fire:** Use self-contained breathing apparatus and chemically protective clothing.

**Fighters**

	<b>SAFETY DATA SHEET</b>	<b>Page : 2 / 5</b>
		<b>Revised edition no : 1.0/2010</b>
	<b>Ammonia</b>	<b>Date : 1/4/2010</b>

## 6 ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	: Evacuate area. Ensure adequate air ventilation. Use self-contained breathing apparatus and chemically protective clothing.
<b>Environmental precautions</b>	: Try to stop release. Reduce vapour with fog or fine water spray.
<b>Clean up methods</b>	: Ventilate area. Wash contaminated equipment or sites of leaks with copious quantities of water. Keep area evacuated and free from ignition sources until any spilled liquid has evaporated. Hose down area with water.

## 7 HANDLING AND STORAGE

<b>Storage</b>	: Segregate from oxidant gases and other oxidants in store. Keep container below 50 °C in a well ventilated place.
<b>Handling</b>	: Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Do not allow back feed into the container. Suck back of water into the container must be prevented. Keep away from ignition sources (including static discharges). Purge air from system before introducing gas. Refer to supplier's container handling instructions.

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Personal protection</b>	: Keep suitable chemically resistant protective clothing readily available for emergency use. Keep self contained breathing apparatus readily available for emergency use. Do not smoke while handling product. Ensure adequate ventilation. Protect eyes, face and skin from liquid splashes.
<b>Occupational Exposure Limits:</b>	Ammonia: IND [ppm] : 25 Ammonia: TLV© -TWA [ppm]: 25 Ammonia: TLV© -STEL [ppm]: 35 Ammonia: OEL (UK)-LTEL [ppm]: 25 Ammonia: OEL (UK)-STEL [ppm]: 35 Ammonia: VLE - France [ppm]: 50 Ammonia: VME - France [ppm]: 25 Ammonia: MAK - Germany [ppm]: 50

**SAFETY DATA SHEET**

Page : 3 / 5

Revised edition no : 1.0/2010

**Ammonia**

Date : 1/4/2010

**9 PHYSICAL AND CHEMICAL PROPERTIES**

Physical state at 20 °C	: Liquefied gas.
Colour	: Colorless.
Odour	: Ammoniacal
Molecular weight	: 17
Melting point [°C]	:-77.7
Boiling point [°C]	:-33
Critical temperature [°C]	:132
Vapour pressure, 20°C	: 8.6 bar
Relative density, gas (air=1)	:0.6
Relative density, liquid (water=1)	:0.7
Solubility in water [mg/l]	: Hydrolyses.
Flammability range [vol% in air]	:15 to 30
Auto-ignition temperature [°C]	:630
Other data	: Although this substance has flammability data, it is difficult to ignite in air and is classified as non-flammable.

**10 STABILITY AND REACTIVITY**

Stability and reactivity	: May react violently with oxidants. May react violently with acids. Reacts with water to form corrosive alkalis. Can form explosive mixture with air.
--------------------------	---

**11 TOXICOLOGICAL INFORMATION**


Toxicity information	: Toxic by inhalation. May cause inflammation of the respiratory system and skin. Inhalation of large amounts leads to bronchospasm, laryngeal oedema and pseudomembrane formation.
LC50 [ppm/1h]	:4000

**12 ECOLOGICAL INFORMATION**

Ecological effects information	: May cause pH changes in aqueous ecological systems.
--------------------------------	---

**13 DISPOSAL CONSIDERATIONS**

General	: Avoid discharge to atmosphere. Do not discharge into any place where its accumulation could be dangerous. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Gas may be scrubbed in sulphuric acid solution. Gas may be scrubbed in water. Toxic and corrosive gases formed during combustion should be scrubbed before discharge to atmosphere. Contact supplier if guidance is required.
---------	--

	<b>SAFETY DATA SHEET</b>	Page : 4 / 5
		Revised edition no : 1.0/2010
	<b>Ammonia</b>	Date : 1/4/2010

#### 14 TRANSPORT INFORMATION


<b>UN No.</b>	: 1005
<b>ADR/RID</b>	
- <b>Proper shipping name</b>	: AMMONIA, ANHYDROUS
- <b>ADR Class</b>	: 2
- <b>ADR/RID Classification code</b>	: 2 TC
- <b>Labelling ADR</b>	Label 2.3: Toxic gas. Label 8: Corrosive substance.
<b>Other transport information</b>	: Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted. - Ensure there is adequate ventilation. - Compliance with applicable regulations.

#### 15 REGULATORY INFORMATION

<b>EC Classification</b>	: Index No : 007-001-00-5 R10 T; R23 C; R34 N; R50
<b>EC Labelling</b>	
- <b>Symbol(s)</b>	T : Toxic N : Dangerous for the environment.
- <b>R Phrase(s)</b>	R10 : Flammable. R23 : Toxic by inhalation. R34 : Causes burns. R50 : Very toxic to aquatic organisms.
- <b>S Phrase(s)</b>	S9 : Keep container in a well-ventilated place. S16 : Keep away from sources of ignition - No smoking. 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 when possible). S61 : Avoid release to the environment. Refer to special instructions/Safety data sheets.

#### 16 OTHER INFORMATION

Ensure all national/local regulations are observed.  
Ensure operators understand the toxicity hazard.  
Users of breathing apparatus must be trained.  
This Safety Data Sheet has been established in accordance with the applicable Indian Directives and applies to all Countries that have translated the Directives in their national laws.  
Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

	<b>SAFETY DATA SHEET</b>	<b>Page : 5 / 5</b>
		<b>Revised edition no : 1.0/2010</b>
	<b>Ammonia</b>	<b>Date : 1/4/2010</b>

#### 16 OTHER INFORMATION (continued)

Details given in this document are believed to be correct. Proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

**Recommended uses and restrictions** : This MSDS is for information purposes only and is subject to change without notice.

**End of Document**

Contact: India  
 Maharashtra  
**OM SAI ENTERPRISES**  
 (A Div. of Verma Gases (I) Pvt. Ltd.)  
 A-101, MIDC Shendra,  
 Aurangabad-431210.  
 Phone: +91 240 2622114  
 Fax: +91 240 2622014  
 Emergency Mobile: +91 9370539797  
 Website: <http://www.vermagroup.co.in>  
<http://www.vermagroup.com>  
 E-mail: [omsai@vermagroup.co.in](mailto:omsai@vermagroup.co.in)

Gujarat  
**Verma Gases (India) Pvt. Ltd.**  
 (An ISO 9001-2000 Company)  
 669, GIDC, Panoli,  
 Ankeleshwar-320024.  
 Phone: +91 265 2700150  
 Fax: +91 265 2750841  
 Emergency Mobile: +91 9327272729  
 Website: <http://www.ammonia.co>  
<http://www.astrogemjewellery.com>  
 E-mail: [mail@vermagroup.co.in](mailto:mail@vermagroup.co.in)