

**Product Name**     **AMMONIA**

**1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

**Supplier Name**     **COREGAS PTY LTD**  
**Address**            66 Loftus Rd, Yennora, NSW, AUSTRALIA, 2161  
**Telephone**         (02) 9794 2223  
**Fax**                 (02) 9794 2221  
**Emergency**        1300 657 070  
**Email**             info@coregas.com  
**Web Site**          http://www.coregas.com/  
  
**Synonym(s)**        40831002 - MSDS NUMBER  
  
**Use(s)**             INDUSTRIAL APPLICATIONS  
**MSDS Date**        17 Dec 2008

**2. HAZARDS IDENTIFICATION**

**CLASSIFIED AS HAZARDOUS ACCORDING TO ASCC CRITERIA**

**RISK PHRASES**

R10                   Flammable.  
R23                    Toxic by inhalation.  
R34                    Causes burns.  
R50                    Very toxic to aquatic organisms.

**SAFETY PHRASES**

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 where possible).  
S61                    Avoid release to the environment. Refer to special instructions / safety data sheets.  
S9                     Keep container in a well ventilated place.

**CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE**

<b>UN No.</b>	1005	<b>DG Class</b>	2.3	<b>Subsidiary Risk(s)</b>	8
<b>Packing Group</b>	None Allocated	<b>Hazchem Code</b>	2RE	<b>EPG</b>	2B3

**3. COMPOSITION/ INFORMATION ON INGREDIENTS**

Ingredient	Formula	CAS No.	Content
AMMONIA	N-H3	7664-41-7	100%

## PRODUCT NAME **AMMONIA**

### 4. FIRST AID MEASURES

<b>Eye</b>	Hold eyelids apart and flush the eye continuously with water. Continue flushing until advised to stop by the PIC or a doctor, or for at least 15 minutes.
<b>Inhalation</b>	If inhaled, remove from contaminated area. Remove contaminated clothing and check there is no obstruction to the airway. If breathing is weak or has ceased, give artificial respiration. Further treatment should be symptomatic and supportive. Consult doctor and recommend admission to hospital for observation.
<b>Skin</b>	Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.
<b>Ingestion</b>	For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Conscious patient should drink large volumes of water to dilute. Do not induce vomiting.
<b>Advice to Doctor</b>	Management of pulmonary oedema. Alkali burns, particularly to the eyes, can result in severe and sometimes permanent damage.
<b>First Aid Facilities</b>	Eye wash facilities and safety shower are recommended.

### 5. FIRE FIGHTING MEASURES

<b>Flammability</b>	Non flammable liquid - gas is flammable within certain vapour concentration limits and can form explosive mixtures with air. Gas is lighter than air and will generally disperse, however may concentrate in hollows or sumps. Dissolves exothermically in water. Corrosive to metals evolving flammable hydrogen. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling.
<b>Fire and Explosion</b>	Potentially flammable gas. Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Call fire brigade. This product will add fuel to a fire. Cool cylinders or containers exposed to fire by applying water from a protected location. Do not approach cylinders or containers suspected of being hot. Remove cool cylinders from the path of the fire. Evacuate the area if unable to keep cylinders cool. If a flame from the cylinder is impinging on flammable materials or other cylinders then evacuate the area. If the cylinder is standing alone and the flame is not impinging on flammable materials or other cylinders then let the flame continue until all gas has been consumed. Ensure working area is well ventilated before re-entry.
<b>Extinguishing</b>	Dry agent, carbon dioxide or water fog. Prevent contamination of drains or waterways.
<b>Hazchem Code</b>	2RE

### 6. ACCIDENTAL RELEASE MEASURES

<b>Spillage</b>	If the cylinder is leaking, eliminate all potential ignition sources and evacuate area of personnel. Inform manufacturer/supplier of leak. Wear appropriate PPE and carefully move it to a well ventilated remote area, then allow to discharge. Do not attempt to repair leaking valve or cylinder safety devices.
-----------------	---

### 7. STORAGE AND HANDLING

<b>Storage</b>	Do not store near sources of ignition or incompatible materials. Cylinders should be stored below 45°C in a secure area, upright and restrained to prevent cylinders from falling. Cylinders should also be stored in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.
<b>Handling</b>	Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

### 8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

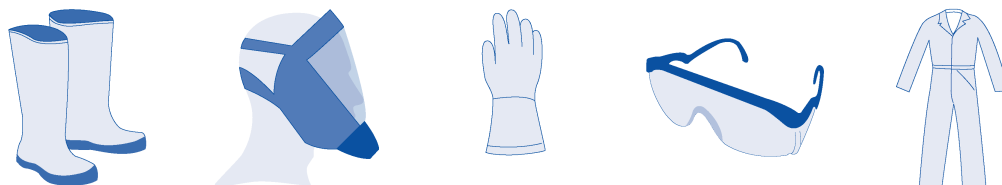
Exposure Stds	Ingredient	Reference	TWA		STEL	
			ppm	mg/m3	ppm	mg/m3
	Ammonia	ASCC (AUS)	25.0	17.0	35.0	24.0

**Biological Limits** No biological limit allocated.

## PRODUCT NAME **AMMONIA**

**Engineering Controls** Do not inhale vapours. Use only in well ventilated areas. In poorly ventilated areas, mechanical explosion proof extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

**PPE** Wear leather gloves, safety boots, coveralls, a Type K (Ammonia) respirator and safety glasses. Only experienced and trained person should use this product. Where an inhalation risk exists, wear: self Contained Breathing Apparatus (SCBA) or an Air-line respirator. At high vapour levels, wear: self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	COLOURLESS GAS OR LIQUID	<b>Solubility (Water)</b>	SOLUBLE
<b>Odour</b>	PUNGENT SUFFOCATING ODOUR	<b>Specific Gravity</b>	NOT AVAILABLE
<b>pH</b>	NOT AVAILABLE	<b>% Volatiles</b>	NOT AVAILABLE
<b>Vapour Pressure</b>	NOT AVAILABLE	<b>Flammability</b>	FLAMMABLE
<b>Vapour Density</b>	NOT AVAILABLE	<b>Flash Point</b>	NOT AVAILABLE
<b>Boiling Point</b>	-33.4°C	<b>Upper Explosion Limit</b>	NOT AVAILABLE
<b>Melting Point</b>	-78°C	<b>Lower Explosion Limit</b>	NOT AVAILABLE
<b>Evaporation Rate</b>	NOT AVAILABLE		

## 10. STABILITY AND REACTIVITY

**Chemical Stability** Stable under recommended conditions of storage.

**Conditions to Avoid** Avoid heat, sparks, open flames and other ignition sources.

**Material to Avoid** Incompatible (potentially explosive) with oxidising agents (eg. hypochlorites, peroxides), acids (eg. nitric acid), metals (eg. aluminium, potassium, magnesium) and heat sources. Copper, zinc, tin and their alloys will be corroded. Forms explosive compounds with silver and mercury. Violent reactions can occur with halogens and organic halides.

**Decomposition** May evolve toxic gases if heated to decomposition.

**Hazardous Reactions** Polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

**Health Hazard Summary** Highly corrosive. Characteristic smell from 5 ppm and irritant effects usually provides good warning properties. Extremely irritating and corrosive. Exposure to low levels may cause irritation with coughing and broncho spasm. Acute exposure to high levels may result in pulmonary oedema and asphyxia. Can be promptly fatal above 1500 ppm. Delayed reaction including pulmonary oedema up to 24 hours after exposure. Chronic irritation to the eyes, nose and upper respiratory tract may result from repeated exposure to ammonia vapour.

**Eye** Highly corrosive. Gas and liquid are extremely irritating and corrosive. Mild concentrations of vapour will cause irritation, higher concentrations may cause burns, inflammation and swelling of the eyes with possible loss of vision. Persons with potential exposure should not wear contact lenses.

**Inhalation** Corrosive. Over exposure may result in irritation to the eyes, nose and upper respiratory tract. CAUTION: Effects may be delayed.

**Skin** Highly corrosive. Severe irritant. Low temperature evaporating liquid can cause cold burns.

**Ingestion** Ingestion is considered unlikely due to product form. However, ingestion of liquid may result in burns to the mouth and throat.

**Toxicity Data** AMMONIA (7664-41-7)  
LC50 (Inhalation): 2000 ppm/4 hours (rat)  
LCLo (Inhalation): 5000 ppm/5 minutes (human)  
LD50 (Ingestion): 350 mg/kg (rat)  
TCLo (Inhalation): 20 ppm (human)  
TDLo (Ingestion): 0.015 mL/kg (man)  
TDLo (Skin): 1000 mg/kg (human)

# PRODUCT NAME AMMONIA

## 12. ECOLOGICAL INFORMATION

**Environment** When ammonia appears in water under the normal conditions (aerobic), it is rapidly converted to nitrate by nitrification; the principal water contaminant normally being nitrate. The pH in water is increased by the presence of ammonia ion, in the form of hydroxide ions. Ammonia is strongly adsorbed on soil, and on sediment particles and colloids in water.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal** Cylinders should be returned to the manufacturer or supplier for disposal of contents.

**Legislation** Dispose of in accordance with relevant local legislation.

## 14. TRANSPORT INFORMATION

**Transport** Ensure cylinder is separated from driver.



### CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

<b>Shipping Name</b>	AMMONIA, ANHYDROUS				
<b>UN No.</b>	1005	<b>DG Class</b>	2.3	<b>Subsidiary Risk(s)</b>	8
<b>Packing Group</b>	None Allocated	<b>Hazchem Code</b>	2RE	<b>EPG</b>	2B3

### IATA

<b>Shipping Name</b>	AMMONIA, ANHYDROUS				
<b>UN No.</b>	1005	<b>DG Class</b>	2.3	<b>Subsidiary Risk(s)</b>	8
<b>Packing Group</b>	None Allocated				

### IMDG

<b>Shipping Name</b>	AMMONIA, ANHYDROUS				
<b>UN No.</b>	1005	<b>DG Class</b>	2.3	<b>Subsidiary Risk(s)</b>	8
<b>Packing Group</b>	None Allocated				

## 15. REGULATORY INFORMATION

**Poison Schedule** Classified as a Schedule 6 (S6) Poison using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

**AICS** All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

## 16. OTHER INFORMATION

**Additional Information** Application method: Gas withdrawal: regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment. Liquid withdrawal: appropriate refrigeration equipment or appropriate heat exchanger to vaporise the liquid.

### ABBREVIATIONS:

ADB - Air-Dry Basis.

BEI - Biological Exposure Indice(s)

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

CNS - Central Nervous System.

EINECS - European Inventory of Existing Commercial chemical Substances.

IARC - International Agency for Research on Cancer.

M - moles per litre, a unit of concentration.

mg/m<sup>3</sup> - Milligrams per cubic metre.

NOS - Not Otherwise Specified.

NTP - National Toxicology Program.

OSHA - Occupational Safety and Health Administration.

pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).

ppm - Parts Per Million.

**PRODUCT NAME AMMONIA**

RTECS - Registry of Toxic Effects of Chemical Substances.  
TWA/ES - Time Weighted Average or Exposure Standard.

**HEALTH EFFECTS FROM EXPOSURE:**

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

**Report Status**

This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Material Safety Data Sheet ('MSDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this MSDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this MSDS.

**Prepared By**

Risk Management Technologies  
5 Ventnor Ave, West Perth  
Western Australia 6005  
Phone: +61 8 9322 1711  
Fax: +61 8 9322 1794  
Email: info@rmt.com.au  
Web: www.rmt.com.au

**MSDS Date:** 17 Dec 2008

**End of Report**