Safety data sheet
according to 1907/2006/EC, Article 31

1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name: AMMONIUM HYDROXIDE (AMMONIA SOLUTION) 25 %**

· **Article number:** PB0001
· **CAS Number:** 1336-21-6
· **EC number:**
215-647-6
· **Index number:**
007-001-01-2
· **Relevant identified uses of the substance or mixture and uses advised against** Industrial Use
· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Johannesburg
1 Berrange Road
Wadeville, Germiston
Tel: 011-821 3300

Port Elizabeth
127 Grahamstown Road
Deal Party, Port Elizabeth
Tel: 041-403 1000

Cape Town
54 Killarney Avenue
Killarney Gardens, Milnerton, Cape Town
Tel: 021-550 8100

Jacobs
150 Quality Street,
Jacobs, Durban
Tel: 031-468 5424

Mobeni
90 Pendlebury Road,
Mobeni
Tel: 031-469 0165
Head Office
13 Sloane Street
Epsom Downs Office Park
Bryanston
Tel: 011-7098743

Protea Chemicals KZN
150 Quality Street, Jacobs
Durban
Tel: 031-4685424

Protea Chemicals Cape Town
54 Killarney Avenue
Killarney Gardens,
Milnerton, Cape Town
Tel: 021-5508100

Protea Chemicals Inland
1 Berrange Rd
Wadeville, Germiston
Tel: 011-8213300

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· **Further information obtainable from:** Protea Chemicals
· **Emergency telephone number:**
08610 OMNIA or
08610 66642

2 Hazards identification

· **Classification of the substance or mixture**

corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

· **Label elements**
· **GHS label elements**
The substance is classified and labelled according to the Globally Harmonised System (GHS).
· **Hazard pictograms**

GHS05 GHS09

· **Signal word** Danger
· **Hazard statements**
Causes severe skin burns and eye damage.
Very toxic to aquatic life.
· **Precautionary statements**
Do not breathe dusts or mists.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterisation: Substances**
· **CAS No. Description**
AMMONIUM HYDROXIDE (AMMONIA SOLUTION) 25 %
· **Identification number(s)**
· **EC number:** 215-647-6

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· **Index number:** 007-001-01-2

4 First aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:**
Remove to fresh air.In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly. Remove contaminated clothing. Flush affected areas with plenty of water and soap.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Drink plenty of water and provide fresh air. Call for a doctor immediately.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Use breathing apparatus with independent air supply (Isolated)

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water. Should not be released into the environment.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders). Transfer into suitable containers. To be disposed of in compliance with existing regulations. After cleaning, flush away traces with water.
Use neutralising agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
No special precautions are necessary if used correctly. Avoid contact with skin, eyes and clothing.

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· **Information about fire - and explosion protection:**
Put on appropriate personal protective equipment. Keep away from open flames, shut of the production of sources of ignition. Eelectricity: static electricity, electricity sparks, heat. Do not breathe vapor or mist. No smoking.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Observe the rules usually applicable when handling chemicals.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep container tightly sealed in a dry well-ventilated place.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:**
Ensure eyewash stations and safety showers are close to the workstation location.

· **Control parameters**
· **Ingredients with limit values that require monitoring at the workplace:** Not required.
· **Additional information:** The lists valid during the making were used as basis.

· **Exposure controls**
Occupational Exposure Limits (OEL)

TWA OEL-RL	SHORT TERM OEL-RL
17mg/m3	24mg/m3

· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.
· **Protection of hands:**
Due to missing tests no recommendation to the glove material can be given for the product/the preparation/ the chemical mixture.

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**
Safety glasses

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Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Fluid
Colour:	Clear, colourless
· **Odour:**	Ammonia-like
· **Odour threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/freezing point:	-57,5 °C
Initial boiling point and boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	Not applicable.
· **Ignition temperature:**	
Decomposition temperature:	Not determined.
· **Auto-ignition temperature:**	Not determined.
· **Explosive properties:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	15,4 Vol %
Upper:	33,6 Vol %
· **Vapour pressure at 20 °C:**	443 hPa
· **Density at 20 °C:**	0,88-0,89 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
water at 20 °C:	571 g/l
· **Partition coefficient: n-octanol/water:**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** Freely soluble in water. Aqueous solutions reacts alkaline.

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· **Chemical stability**
Ammonia solution will react rapidly with copper, brass, zinc, and many alloys, especially those containing copper and corrode them. Besides ammonia solution will not react with iron or still. Therefore only only steeel or ductile iron should be used for ammonia sysytems, ammonia containers, valves, fitting and piping.
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** Risk of explosion in contact with: strong acids; iodine.
· **Conditions to avoid**
The substance should not be stored with substances with which hazardous chemical reactions are possible,
· **Incompatible materials:** The substance react dangerously with bases.
· **Hazardous decomposition products:** Nitrogen and hydrogen.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity**

· **LD/LC50 values relevant for classification:**		
Oral	LD50	350 mg/kg (rat)

· **Primary irritant effect:**
· **Skin corrosion/irritation** Caustic effect on skin and mucous membranes.
· **Serious eye damage/irritation** Strong caustic effect.
· **Respiratory or skin sensitisation** No sensitising effects known.
· **Additional toxicological information:**
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behaviour in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Very toxic for fish
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

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13 Disposal considerations

· ***Waste treatment methods***
· ***Recommendation***
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· ***Uncleaned packaging:***
· ***Recommendation:*** *Disposal must be made according to official regulations.*

14 Transport information

· ***UN-Number***	
· ***ADR, IMDG, IATA***	*UN2672*
· ***UN proper shipping name***	
· ***ADR***	*2672 AMMONIA SOLUTION, ENVIRONMENTALLY HAZARDOUS*
· ***IMDG, IATA***	*AMMONIA SOLUTION*
· ***Transport hazard class(es)***	
· ***ADR***	
· ***Class***	*8 Corrosive substances.*
· ***Label***	*8*
· ***IMDG, IATA***	
· ***Class***	*8 Corrosive substances.*
· ***Label***	*8*
· ***Subsidiary risk***	*-*
· ***Packing group***	
· ***ADR, IMDG, IATA***	*III*
· ***Environmental hazards:***	*Environmentally hazardous substance, liquid*
· ***Marine pollutant:***	*No*
· ***Special marking (ADR):***	*Symbol (fish and tree)*
· ***Special precautions for user***	*Warning: Corrosive substances.*
· ***EMS Number:***	*F-A,S-B*
· ***Segregation groups***	*Alkalis*
· ***Stowage Category***	*A*
· ***Stowage Code***	*SW2 Clear of living quarters.* *SW3 Shall be transported under temperature control.*
· ***Segregation Code***	*SG35 Stow "separated from" acids.*
· ***ERG No.***	*154*
· ***Transport in bulk according to Annex II of Marpol and the IBC Code***	*Not applicable.*

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· ***Transport/Additional information:***	
· ***ADR***	
· ***Limited quantities (LQ)***	*5L*
· ***Excepted quantities (EQ)***	*Code: E1* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 1000 ml*
· ***Transport category***	*3*
· ***Tunnel restriction code***	*E*
· ***IMDG***	
· ***Limited quantities (LQ)***	*5L*
· ***Excepted quantities (EQ)***	*Code: E1* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 1000 ml*
· ***UN "Model Regulation":***	*UN 2672 AMMONIA SOLUTION, ENVIRONMENTALLY HAZARDOUS, 8, III, ENVIRONMENTALLY HAZARDOUS*

15 Regulatory information

· ***Safety, health and environmental regulations/legislation specific for the substance or mixture***
· ***GHS label elements***
The substance is classified and labelled according to the Globally Harmonised System (GHS).
· ***Hazard pictograms***

GHS05 GHS09

· ***Signal word*** *Danger*
· ***Hazard statements***
Causes severe skin burns and eye damage.
Very toxic to aquatic life.
· ***Precautionary statements***
Do not breathe dusts or mists.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· ***Directive 2012/18/EU***
· ***Named dangerous substances - ANNEX I*** *Substance is not listed.*
· ***Seveso category*** *E1 Hazardous to the Aquatic Environment*
· ***Qualifying quantity (tonnes) for the application of lower-tier requirements*** *100 t*
· ***Qualifying quantity (tonnes) for the application of upper-tier requirements*** *200 t*
· ***Chemical safety assessment:*** *A Chemical Safety Assessment has not been carried out.*

PRC

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1