

# SAFETY DATA SHEET

## Ammonia, aqueous solution 25 - 33 %

### Item No. 60-044



#### SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **Date of issue:** 02.12.2003
- **1.1 Product identifier**
- **Trade name:** *Ammonia, aqueous solution 25 - 33% (different qualities)*
- **Synonym(s):**  
*Salmiakgeist 25-33% (versch. Qualitäten)*  
*Ammoniumhydroxidlösung 25-33%*  
*Ammoniaklösung 25-33%*
- **1.2 Relevant identified uses of the substance or mixture and uses advised against no data available**
- **Application of the substance / the preparation:**  
*Chemicals for various applications*  
*Intermediate*
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer / Supplier:**

UCY ENERGY GROUP  
UCY business services & trading (Germany) GmbH  
Am Villepohl 4  
DE-53347 Alfter  
Phone: +49 228 2428 732  
E-mail: [thilo.schneider@ucy-energy.com](mailto:thilo.schneider@ucy-energy.com)  
Thilo Schneider, Quality Manager +49 163 8141789

#### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

Met. Corr. 1     H290 May be corrosive to metals.  
Skin Corr. 1B     H314 Causes severe skin burns and eye damage.



GHS09 environment

Aquatic Acute 1     H400 Very toxic to aquatic life.



GHS07

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STOT SE 3 H335 May cause respiratory irritation.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



C; Corrosive

R34: Causes burns.



N; Dangerous for the environment

R50: Very toxic to aquatic organisms.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS05



GHS07



GHS09

· **Signal word** Danger

· **Hazard-determining components of labelling:**

Ammonia

· **Hazard statements**

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

H400 Very toxic to aquatic life.

· **Precautionary statements**

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

P273 Avoid release to the environment.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P309+P311 IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterization: Mixtures**

· **Description:** Aqueous solution

· **Dangerous components:**

CAS: 1336-21-6	Ammonia	25 - 33%
EINECS: 215-647-6	C R34;  N R50	
Index number: 007-001-01-2	Met. Corr. 1, H290; Skin Corr. 1B, H314;  Aquatic Acute 1, H400	
Reg.nr.: 01-2119488876-14		

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

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## SECTION 4: First aid measures

### · 4.1 Description of first aid measures

#### · General information:

Take affected persons into the open air.

Do not leave affected persons unsupervised.

Immediately remove any clothing contaminated by the product.

Personal protection for the person providing first aid.

#### · After inhalation:

Take affected persons into the open air and position comfortably.

Seek medical treatment.

#### · After skin contact:

Rinse with plenty of water.

Cover wound with a sterile dressing.

Seek medical treatment.

#### · After eye contact:

Rinse opened eye for several minutes under running water.

Use eye protection.

Call a doctor immediately.

#### · After swallowing:

Drink copious amounts of water and provide fresh air. Instantly call for doctor.

Do not induce vomiting - Danger of perforation!

### · 4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

### · Danger: Danger of pneumonia.

### · 4.3 Indication of any immediate medical attention and special treatment needed No further relevant information available.

## SECTION 5: Firefighting measures

### · 5.1 Extinguishing media

### · Suitable extinguishing agents Product does not burn - take extinguishing measures according to fire conditions.

### · 5.2 Special hazards arising from the substance or mixture

Corrosive gases/vapours

Nitrogen oxides (NO<sub>x</sub>)

Ammonia (NH<sub>3</sub>)

Can form explosive gas-air mixtures.

Danger of containers bursting because of high vapour pressure.

### · 5.3 Advice for firefighters

#### · Protective equipment:

Wear self-contained breathing apparatus.

Do not inhale explosion gases or combustion gases.

Wear full protective suit.

#### · Additional information

Cool endangered containers with water spray jet.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

If without risk possible, move drums with material away from dangerous area.

## SECTION 6: Accidental release measures

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

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

Do not breathe vapours.

Use breathing protection against the effects of fumes/dust/aerosol.

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*Avoid contact with skin and eyes.*

· **6.2 Environmental precautions:**

*Damp down gases/fumes/haze with water spray jet.*

*Do not allow to enter drainage system, surface or ground water.*

*Inform respective authorities in case product reaches water or sewage system.*

· **6.3 Methods and material for containment and cleaning up:**

*Ensure adequate ventilation.*

*Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).*

*Use neutralizing agent.*

*Send for recovery or disposal in suitable containers.*

*Dispose of the material collected according to regulations.*

· **6.4 Reference to other sections**

*See Section 8 for information on personal protection equipment.*

## SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

*Ensure good ventilation/exhaustion at the workplace.*

*Do not inhale vapours/aerosols.*

*Make sure that all applicable workplace limits are observed.*

*Avoid contact with skin and eyes.*

*Open and handle container with care.*

*Avoid splashes or spray in enclosed areas.*

*When diluting, always stir the product into standing water.*

· **Information about protection against explosions and fires:**

*Fumes can combine with air to form an explosive mixture.*

*Keep ignition sources away - Do not smoke.*

*Protect from heat.*

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage**

· **Requirements to be met by storerooms and containers:**

*Observe all local and national regulations for storage of water polluting products.*

· **Information about storage in one common storage facility:**

*Do not store together with oxidizing and acidic materials.*

*Store away from metals.*

· **Further information about storage conditions:**

*Store container in a well ventilated position.*

*Keep container tightly sealed.*

*Protect from heat and direct sunlight.*

· **Recommended storage temperature:** < 25 °C

· **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **8.1 Control parameters**

· **Components with critical values that require monitoring at the workplace:**

*The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.*

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<b>Additional Occupational Exposure Limit Values for possible hazards during processing:</b>	
<b>7664-41-7 Ammonia</b>	
WEL (Great Britain)	Short-term value: 25 mg/m <sup>3</sup> , 35 ppm Long-term value: 18 mg/m <sup>3</sup> , 25 ppm

IOELV (European Union)	Short-term value: 36 mg/m <sup>3</sup> , 50 ppm Long-term value: 14 mg/m <sup>3</sup> , 20 ppm
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· **Additional information:** The lists that were valid during the compilation were used as basis.

## · 8.2 Exposure controls

### · Personal protective equipment

#### · General protective and hygienic measures

Keep away from foodstuffs, beverages and food.

Instantly remove any contaminated garments.

Do not carry cleaning cloths impregnated with the product in trouser pockets.

Do not eat, drink or smoke while working.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Wash hands during breaks and at the end of the work.

Use skin protection cream for preventive skin protection.

#### · Breathing equipment:

Use breathing protection in case of insufficient ventilation.

If all workplace limits are observed and good ventilation is ensured, no special precautions necessary.

#### · Recommended filter device for short term use: Filter K

#### · Protection of hands:

Alkaline resistant 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.

Check the permeability prior to each renewed use of the glove.

To avoid skin problems reduce the wearing of gloves to the required minimum.

#### · Material of gloves

Butyl rubber - BR

Recommended thickness of the material:  $\geq 0.7$  mm

Fluorocarbon rubber (Viton) - FKM

Recommended thickness of the material:  $\geq 0.7$  mm

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

Penetration time:  $\geq 8$  hours

Protective gloves should be replaced at first signs of wear.

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

#### · Not suitable are gloves made of the following materials:

Textile gloves

Leather gloves

#### · Eye protection:

Tightly sealed safety glasses

Face shield

#### · Body protection:

Alkaline resistant protective clothing

Boots

Body protection must be chosen depending on activity and possible exposure.

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## SECTION 9: Physical and chemical properties

### · 9.1 Information on basic physical and chemical properties

#### · General Information

##### · Appearance:

**Form:** liquid  
**Colour:** colourless  
clear

· **Smell:** ammonia-like  
pungent, makes eyes water

· **Odour threshold:** not determined

· **pH-value at 20°C:** > 11

#### · Change in condition

**Melting point/Melting range:** For data of a specific product please refer to technical data sheet.

**Boiling point/Boiling range:** For data of a specific product please refer to technical data sheet.

· **Flash point:** not applicable

· **Ignition temperature:** ~630°C

· **Decomposition temperature:** not determined

· **Self-inflammability:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures is possible.

#### · Critical values for explosion:

**Lower:** 15 Vol % (NH<sub>3</sub>)

**Upper:** 28 Vol % (NH<sub>3</sub>)

· **Oxidizing properties** not applicable

· **Vapor pressure at 50°C:** ~1900 hPa

· **Density at 20°C:** 0.89 ~ 0.91 g/cm<sup>3</sup>

· **Vapour density (AIR = 1):** no data available

· **Evaporation rate** no data available

#### · Solubility in / Miscibility with

**Water:** fully miscible

· **Organic solvents:** not determined

#### · Viscosity:

**dynamic:** not determined

**kinematic:** not determined

· **9.2 Other information** No further relevant information available.



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### SECTION 10: Stability and reactivity

- **10.1 Reactivity**  
*The product causes severe reactions with acids.*  
*Reacts with strong oxidizing agents*  
*Reacts with alkali (lyes)*
- **10.2 Chemical stability**  
*Thermal decomposition / conditions to be avoided: Heat*
- **10.3 Possibility of hazardous reactions**  
*Danger of containers bursting because of high vapour pressure*  
*Reacts with acids, alkalis and oxidizing agents.*  
*Forms explosive gases / fumes*  
*Corrosive action on metals*
- **10.4 Conditions to avoid** *No further relevant information available.*
- **10.5 Incompatible materials:**  
*Strong oxidizing agents*  
*Strong acids*  
*Alkaline materials*  
*Transition metals*  
*Iodine*  
*Silver*
- **10.6 Hazardous decomposition products:**  
*Corrosive gases/vapours*  
*Nitrogen oxides (NO<sub>x</sub>)*  
*Ammonia (NH<sub>3</sub>)*

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**  
*Acute toxicity:*

· **LD/LC50 values that are relevant for classification:**

**7664-41-7 Ammonia**

Oral	LD50	350 mg/kg (rat)
Inhalative	LC50/4 h	2 mg/l (rat)

- **Primary irritant effect:**  
*on the skin:* Corrosive to skin and mucous membranes.  
*on the eye:* Corrosive
- **Sensitization:** *No sensitizing effect 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.*  
*The product shows the following dangers according to the calculation method of Regulation (EC) No. 1272/2008 (CLP/GHS):*  
*Skin Corr. 1B*  
*STOT SE 3*  
*The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:*  
*Corrosive*

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## SECTION 12: Ecological information

### · 12.1 Toxicity

#### · Aquatic toxicity:

##### 7664-41-7 Ammonia

LC50/48 h 25.4 mg/l (water flea (daphnia magna))

LC50/96 h 0.16 - 1.10 mg/l (rainbow trout (oncorhynchus mykiss))

### · 12.2 Persistence and degradability biodegradable

### · 12.3 Bioaccumulative potential Does not accumulate in organisms.

### · 12.4 Mobility in soil No further relevant information available.

#### · Ecotoxicological effects:

· **Remark:** Very toxic for fish and aquatic organisms.

#### · Additional ecological information:

##### · General notes:

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

Danger to drinking water if even small quantities leak into soil.

Water hazard class 2 (Self-assessment): hazardous for water

### · 12.5 Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### · 12.6 Other adverse effects No further relevant information available.

## SECTION 13: Disposal considerations

### · 13.1 Waste treatment methods

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

· **Waste disposal key number:** According to local/national regulations.

· **European waste catalogue:** Waste disposal key numbers from EWC have to be assigned depending on origin and processing.

#### · Uncleaned packagings:

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

· **Recommended cleaning agent:** Water, if necessary with cleaning agent.

## SECTION 14: Transport information

### · 14.1 UN-Number

#### · ADR, IMDG, IATA

UN2672

### · 14.2 UN proper shipping name

#### · ADR

UN 2672 AMMONIA SOLUTION

#### · IMDG

AMMONIA SOLUTION, MARINE POLLUTANT

#### · IATA

AMMONIA SOLUTION

### · 14.3 Transport hazard class(es)

#### · ADR



#### · Class

8 (C5) Corrosive substances.

#### · Label

8



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## · IMDG



- Class 8 Corrosive substances.
- Label 8

## · IATA



- Class 8 Corrosive substances.
- Label 8

## · 14.4 Packing group

- ADR, IMDG, IATA III

## · 14.5 Environmental hazards:

- Marine pollutant: Symbol (fish and tree)
- Special marking (ADR): Symbol (fish and tree)

## · 14.6 Special precautions for user

- Warning: Corrosive substances.
- Kemler Number: 80
- EMS Number: F-C,S-U

## · Segregation groups

Alkalis

## · 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

## · Transport/Additional information:

Transport by post may be prohibited or restricted.

## · ADR

- Excepted quantities (EQ): E1
- Limited quantities (LQ): 5L
- Transport category: 3
- Tunnel restriction code: E

## · UN "Model Regulation":

UN2672, AMMONIA SOLUTION, ENVIRONMENTALLY HAZARDOUS, 8, III

## SECTION 15: Regulatory information

### · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### · National regulations

· Information about limitation of use: Employment restrictions concerning young persons must be observed.

· Decree to be applied in case of technical fault: Quantity limits according to "EC Seveso directive" should be observed.

· Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water

#### · Other regulations, limitations and prohibitive regulations

Observe restrictions on the marketing and use according to Annex XVII of Regulation (EC) No 1907/2006.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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## SECTION 16: Other information

*These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

### · **Reasons for changes:**

*The Material Safety Data Sheet has been revised. Changes in the respective chapters are characterized in the left side edge by \*.*

### · **Relevant phrases**

*H290 May be corrosive to metals.*

*H314 Causes severe skin burns and eye damage.*

*H400 Very toxic to aquatic life.*

*R34 Causes burns.*

*R50 Very toxic to aquatic organisms.*

### · **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)*

*IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)*

*ICAO: International Civil Aviation Organization*

*ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)*

*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*

*GHS: Globally Harmonized System of Classification and Labelling of Chemicals*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*