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

### 1.1. Product identifier

<b>Trade name</b>	Ammonium hydroxide solution (10 – 35%)
<b>Chemical description</b>	Ammonium hydroxide solution (10 – 35%); Ammonia solution o. water
<b>CAS N°</b>	1336-21-6
<b>CE N°</b>	215-647-6
<b>Index N°</b>	007-001-01-2
<b>Registration n°</b>	-
<b>Chemical formula</b>	NH <sub>4</sub> OH

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

<b>Relevant identified uses</b>	Industrial and professional Fertilizers Cleaning product Neutralization Contact supplier for more information on uses
<b>Uses advised against</b>	Consumer use not recommended

### 1.3. Details of the supplier of the safety data sheet

<b>Company identification</b>	MULTIGAS Route de l'Industrie 102 CH-1564 Domdidier
<b>Phone number</b>	+41 (0) 26 676 94 94
<b>E-mail address</b>	<a href="mailto:info@multigas.ch">info@multigas.ch</a>

### 1.4. Emergency telephone numbers


<b>Switzerland</b>	145 (Toxicology Centre Zurich) or +41 (0) 44 251 51 51 +41 (0) 26 676 94 94 (Multigas)
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## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

<b>Hazards</b>	Acute toxicity, Oral (Category 4)	H302
	Skin corrosion/irritation, Category 1B	H314

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Specific toxicity for target organs (single exposure) Category 3 H335

Hazardous to the aquatic environment — Acute Hazard, H400  
Category 1

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

## 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

<b>Hazard pictograms</b>	  
	GHS05      GHS07      GHS09
<b>Signal word</b>	Danger
<b>Hazard statements</b>	
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H335	May cause respiratory irritation
H400	Very toxic to aquatic life
<b>Precautionary statements</b>	
P260	Do not breathe gas, vapours
P273	Avoid release to the environment
P280	Wear protective gloves, protective clothing, eye protection, face protection
P301+P330+P331+P315	IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Get immediate medical advice/attention
P303+P361+P353+P315	IF ON SKIN: (or hair) Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get immediate medical advice / attention
P304+P340+P315	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention
P305+P351+P338+P315	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice / attention
P310	Immediately call a POISON CENTER or doctor/physician

## 2.3. Other hazards

Irritating to tears

**Ammonium hydroxide solution (10 – 35%)**

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**SECTION 3: Composition/information on ingredients**

**3.1. Substances**

Name	Product identifier	Concentration	Classification
Ammonia solution o. water	(CAS-No.) 1336-21-6 (EC-No.) 215-647-6 (EC Index-No.) 007-001-01-2 (Registration-No.) -	10 – 35%	Acute Tox. 4, H302 Skin Corr.1B, H314 STOT SE 3, H335 Aquatic Chronic 2, H400

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

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

**3.2. Mixtures**

Not established

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

<b>General advice</b>	See a doctor. Show this safety data sheet to the attending physician
<b>In case of inhalation</b>	In case of inhalation, remove the person from the contaminated area. In case of respiratory arrest, give artificial respiration. See a doctor
<b>In case of skin contact</b>	Remove contaminated clothing and shoes immediately. Wash with soap and plenty of water. Take victim immediately to hospital. See a doctor
<b>In case of eyes contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes and consult a doctor
<b>In case of ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. See a doctor

**4.2. Most important symptoms and effects, both acute and delayed**

The main known symptoms and effects are described on the labelling (see section 2.2) and / or section 11


**4.3. Indication of any immediate medical attention and special treatment needed**

Symptomatic treatment

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

<b>Suitable extinguishing media</b>	Water spray or water mist. Dry powder. Foam. Carbone dioxide
<b>Unsuitable extinguishing media</b>	Do not use water jet to extinguish

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## **5.2. Special hazards arising from the substance or mixture**

### **Specific hazards**

In case of fire or excessive heat, hazardous combustion products may be produced

Exposure to fire may cause containers to rupture/explode

### **Hazardous combustion products**

In case of fire or excessive heat, hazardous combustion products may be produced such as : Nitric oxide/nitrogen dioxide

## **5.3. Additional information**

Cool endangered receptacles with water spray jet from a protected position

## **SECTION 6: Accidental release measures**

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

Avoid contact with skin and eyes

Avoid breathing vapours, spray mists or gases

Personal protective equipment, see section 8

### **6.2. Environmental precautions**

Contain and dike the spreading. Do not empty into drains or rivers

### **6.3. Methods and material for containment and cleaning up**

Absorb the liquid spilled into a material such as: sand/soil

Wash the unrecoverable residue with plenty of water

### **6.4. Reference to other sections**

See also sections 8 and 13

## **SECTION 7: Handling and storage**

### **7.1. Precautions for safe handling**

Avoid contact with skin and eyes

Avoid breathing vapour or mist

For precautions, see section 2.2

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

Take all necessary measures to avoid accidental release of the product into sewers and waterways in the event of rupture of containers or transfer systems

Keep the container tightly closed and protected from moisture. Store in a dry, cool and well ventilated place

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### 7.3. Specific end use(s)

None

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Components with occupational exposure limits

Component	CAS N°	Exposure value type	Control parameter	Source
Anhydrous ammonia	1336-21-6	TWA	-	No occupational exposure limit values
			-	
		OEL	-	No occupational exposure limit values
			-	

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

Maintain appropriate exhaust ventilation locally and overall

#### 8.2.2. Individual protection measures, e.g. personal protective equipment

##### Eye/face protection

Wear full safety glasses and face protection when filling, connecting and locking. Standard EN 166

##### Skin / hand protection

Wear protective gloves when handling gas cylinders - Standard EN 388- Protective gloves against mechanical hazards

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

##### **Full contact**

Material: butyl-rubber

Minimum layer thickness: 0,3 mm

Break through time: 480 min

##### **Splash contact**

Material: butyl-rubber

Minimum layer thickness: 0,3 mm

Break through time: 480 min

Have appropriate, chemical-resistant protective clothing ready for use in emergencies

##### Respiratory protection

Self-contained breathing apparatus (SCBA) or positive pressure air mask must be used in oxygenated atmospheres. Standard EN 137 - Self-contained compressed air device with a full face mask

#### 8.2.3. Environmental exposure controls

-

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**SECTION 9: Physical and chemical properties**
**9.1. Information on basic physical and chemical properties**
**Appearance**


• Physical state at 20°C / 101.3kPa	Liquid
• Colour	Colourless
<b>Odour</b>	Ammoniacal
<b>Odour threshold</b>	Data not available
<b>pH</b>	11.7
<b>Melting point / Freezing point</b>	- 60°C
<b>Boiling point</b>	27 °C
<b>Flash point</b>	Data not available
<b>Evaporation rate</b>	Data not available
<b>Flammability (solid, gas)</b>	Data not available
<b>Explosive limits</b>	16 - 27 vol % (Ammonia)
<b>Vapour pressure [20°C]</b>	1.2 bar(a)
<b>Vapour pressure [50°C]</b>	Data not available
<b>Vapour density</b>	Data not available
<b>Relative density, liquid (water=1)</b>	Data not available
<b>Relative density, gas (air=1)</b>	1.21
<b>Water solubility</b>	Data not available
<b>Partition coefficient n-octanol/water (Log Kow)</b>	Data not available
<b>Auto-ignition temperature</b>	Data not available
<b>Decomposition temperature</b>	Data not available
<b>Viscosity</b>	Data not available
<b>Explosive properties</b>	Data not available
<b>Oxidising properties</b>	Data not available

**9.2. Other information**

<b>Molar mass</b>	Data not available
<b>Critical temperature [°C]</b>	Data not available
<b>Relative vapour density</b>	1.21

**SECTION 10: Stability and reactivity**
**10.1. Reactivity**

No reactivity hazard other than the effects described in sub-sections below

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### 10.2. Chemical stability

Stable under the recommended storage conditions

### 10.3. Possibility of hazardous reactions

Can form explosive mixture with air  
May react violently with oxidants

### 10.4. Conditions to avoid

Keep away from heat

### 10.5. Incompatible materials

Iron, Zinc, Copper  
For additional information on compatibility refer to ISO 11114

### 10.6. Hazardous decomposition products

Hazardous decomposition products are formed under fire conditions. -  
Nitrogen oxides (NO<sub>x</sub>)

## SECTION 11: Toxicological information


### 11.1. Information on toxicological effects

<b>Acute toxicity</b>	Not classified
<b>Skin corrosion/irritation</b>	Causes skin burns
<b>Serious eye damage/irritation</b>	Causes serious eye damage
<b>Respiratory or skin sensitisation</b>	Data not available
<b>Germ cell mutagenicity</b>	Data not available
<b>Carcinogenicity</b>	Data not available
<b>Reproductive toxicity</b>	Data not available
<b>STOT-single exposure – Target organ(s)</b>	May irritate the respiratory tract
<b>STOT-repeated exposure</b>	Data not available
<b>Ingestion hazard</b>	Data not available

## SECTION 12: Ecological information

### 12.1. Toxicity

<b>Assessment</b>	Very toxic to aquatic life
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### 12.2. Persistence and degradability

The substance is readily biodegradable. Unlikely to persist

### 12.3. Bioaccumulative potential

Data not available

### 12.4. Mobility in soil

Data not available

### 12.5. Results of PBT and vPvB assessment

PBT / vPvB assessment is not available because the chemical safety assessment is not required / is not conducted

### 12.6. Other adverse effects

Very toxic to aquatic life with long lasting effects

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Product</b>	Residual quantities and non-recyclable solutions must be handed over to a special waste disposal company Return the unused product in its original container to the supplier
<b>Contaminated container</b>	Clean the container with water. After cleaning, recycle or dispose of in an approved facility Contact the supplier if instructions are needed
<b>OMoD Code</b>	16 03 03 Mineral waste containing hazardous substances

## SECTION 14: Transport information

### 14.1. UN number

Transport by road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
2672	2672	2672

### 14.2. UN proper shipping name

Transport by road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
Ammonia solution	Ammonia solution	Ammonia solution



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**14.3. Transport hazard class(es)**

Labelling



ADR/RID  
 IMDG  
 IATA

8  
 Caustic and corrosive substances

**14.4. Packing group**

ADR/RID  
 IMDG  
 IATA

Not established

**14.5. Environmental hazards**

ADR/RID  
 IMDG  
 ICAO-TI / IATA-DGR

Environmentally hazardous substance / mixture  
 Marine pollutant  
 Environmentally hazardous substance / mixture

**14.6. Special precautions for user**

Data not available

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable

**SECTION 15: Regulatory information**

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety data sheet complies with the requirements of Regulation (CE) No. 1907/2006

**15.2. Chemical safety assessment**

No chemical safety assessment has been carried out


**SECTION 16: Other information**

Indication of changes

Revised safety data sheet in accordance with commission regulation (EU) No 2015/830

Abbreviations and acronyms

ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road  
 CAS : Chemical Abstract Service number (USA)  
 CLP : Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

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CSA :	Chemical Safety Assessment
EIGA :	European Industrial Gases Association
EINECS :	European Inventory of Existing Commercial Chemical Substances
EN :	European Standard
ATE :	Acute Toxicity Estimate
IATA :	International Air Transport Association
IMDG Code :	International Maritime Dangerous Goods Code
LC50 :	Lethal Concentration to 50 % of a test population
OMoD :	Swiss Ordinance on the movement of waste
PBT :	Persistent, Bioaccumulative and Toxic
PPE:	Personal Protection Equipment
REACH :	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID :	Regulations concerning the international carriage of dangerous goods by rail
RMM :	Risk Management Measures
STOT-SE :	Specific Target Organ Toxicity - Single Exposure
UN :	United Nations
vPvB :	Very Persistent and Very Bioaccumulative
WGK:	Water Hazards Class

### Full text of H, EUH and P statements used in sections 2 and 3

#### Hazard statements

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H335	May cause respiratory irritation
H400	Very toxic to aquatic life

#### Precautionary statements

P260	Do not breathe gas, vapours
P273	Avoid release to the environment
P280	Wear protective gloves, protective clothing, eye protection, face protection
P301+P330+P331+P315	IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Get immediate medical advice/attention
P303+P361+P353+P315	IF ON SKIN: (or hair) Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get immediate medical advice / attention
P304+P340+P315	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention
P305+P351+P338+P315	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice / attention

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P310

Immediately call a POISON CENTER or doctor/physician

**Disclaimer of liability**

Details given in this document have been prepared based on the most available reliable documents and are believed to be correct at the time of going to press

They do not claim to be exhaustive and should be considered as a guide