SAFETY DATA SHEET

Based upon Regulation (EC) No. 1907/2006, as amended by Regulation (EC) No. 453/2010

Ammonia aqueous solution (25%)

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

1.1 Product identifier:

Product name : Ammonia aqueous solution (25%)

Synonyms : alkaline air, conc=25%; ammonia; ammonia, aqua conc=25%; ammonia, aqueous solution; ammonia, caustic, conc=25% ; ammonia hydrate, conc=25%; ammonia, in aqueous solution, conc=25%; ammonia, liquor, conc=25%; ammoniawater, conc=25%; ammoniawater, stronger, conc=25%; ammonium hydrate, conc=25%; ammonium hydroxide, aqueous solution, conc=25%; aqua ammonia, solution, conc=25%; household ammonia, conc=25%; liquour ammonia, conc=25%; spirit of hartshorn, conc=25%; water of ammonia, conc=25%

Registration number REACH : 01-2119488876-14 Registered with CAS No of the anhydrous form

Product type REACH : Mixture

CAS number : 1336-21-6

EC index number : 007-001-01-2

EC number : 215-647-6

RTECS number : BQ9625000

Molecular mass : 35.05 g/mol

Formula : NH4OH

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

1.2.1 Relevant identified uses

Industrial use

1.2.2 Uses advised against

No uses advised against known

1.3 Details of the supplier of the safety data sheet:

Supplier of the safety data sheet

BALCHEM NV
Westvaartdijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
+32 2 252 17 51
info.grimbergen@balchem.com

Distributor of the product

BALCHEM NV
Westvaartdijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
+32 2 252 17 51
info.grimbergen@balchem.com

1.4 Emergency telephone number:

24h/24h (Telephone advice: English, French, German, Dutch):

+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation EC No 1272/2008

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Skin Corr.	category 1B	H314: Causes severe skin burns and eye damage.
STOT SE	category 3	H335: May cause respiratory irritation.
Aquatic Acute	category 1	H400: Very toxic to aquatic life.

2.1.2 Classification according to Directive 67/548/EEC-1999/45/EC

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC

C; R34 - Causes burns.

N; R50 - Very toxic to aquatic organisms.

2.2 Label elements:

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

Signal word Danger

H-statements

H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.

P-statements

P280	Wear protective gloves, protective clothing and eye protection/face protection.
P260	Do not breathe vapours.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.

2.3 Other hazards:

SECTION 3: Composition/information on ingredients

3.1 Substances:

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to DSD/DPD	Classification according to CLP	Note	Remark
ammonia 01-2119488876-14	1336-21-6 215-647-6	C=25 %	C; R34 N; R50	Skin Corr. 1B; H314 STOT SE 3; H335 Aquatic Acute 1; H400	(1)(2)(8)(10)	Constituent

(1) For R-phrases and H-statements in full: see heading 16
(2) Substance with a Community workplace exposure limit
(8) Specific concentration limits, see heading 16
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

3.2 Mixtures:

Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

After eye contact:

Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist. Do not apply neutralizing agents.

After ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately consult a doctor/medical service.

4.2 Most important symptoms and effects, both acute and delayed:

4.2.1 Acute symptoms

After inhalation:

Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Nausea. Headache. EXPOSURE TO HIGH CONCENTRATIONS: Possible oedema of the upper respiratory tract. Possible inflammation of the respiratory tract. Possible laryngeal spasm/oedema. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung oedema. Risk of pneumonia. Respiratory difficulties. Possible esophageal perforation.

After skin contact:

Caustic burns/corrosion of the skin.

After eye contact:

Corrosion of the eye tissue. Permanent eye damage.

After ingestion:

Risk of aspiration pneumonia. Vomiting. Nausea. AFTER ABSORPTION OF HIGH QUANTITIES: Blue/grey discolouration of the skin. Blood in stool. Blood in vomit. Possible esophageal perforation. FOLLOWING SYMPTOMS MAY APPEAR LATER: Shock.

4.2.2 Delayed symptoms

No effects known.

4.3 Indication of any immediate medical attention and special treatment needed:

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

Water. Water spray. Polyvalent foam. BC powder.

5.1.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known.

5.2 Special hazards arising from the substance or mixture:

On burning: release of toxic and corrosive gases/vapours (nitrous vapours). On heating: release of toxic/corrosive/combustible gases/vapours (ammonia).

5.3 Advice for firefighters:

5.3.1 Instructions:

Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Gas-tight suit. Corrosion-proof suit. Compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Keep upwind. Close doors and windows of adjacent premises. No naked flames. Keep containers closed.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gas-tight suit. Corrosion-proof suit.

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Take account of toxic/corrosive precipitation water. Prevent soil and water pollution. Prevent spreading in sewers.

6.3 Methods and material for containment and cleaning up:

Take up liquid spill into absorbent material, e.g.: sand/earth or powdered limestone. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1 Precautions for safe handling:

Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed. Remove contaminated clothing immediately. Use corrosionproof equipment. Do not discharge the waste into the drain.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Storage temperature: < 25 °C. Keep container in a well-ventilated place. Keep locked up. Provide for a tub to collect spills. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, oxidizing agents, (strong) acids, (strong) bases, metals, halogens.

7.2.3 Suitable packaging material:

Synthetic material, glass.

7.2.4 Non suitable packaging material:

Aluminium, copper, tin, zinc, nickel, bronze.

7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

The Netherlands

Ammoniak	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	20 ppm	
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	14 mg/m³	
	Short time value (Public occupational exposure limit value)	51 ppm	
	Short time value (Public occupational exposure limit value)	36 mg/m³	

EU

Ammonia, anhydrous	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	20 ppm	
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	14 mg/m³	
	Short time value (Indicative occupational exposure limit value)	50 ppm	
	Short time value (Indicative occupational exposure limit value)	36 mg/m³	

Belgium

Ammoniac	Time-weighted average exposure limit 8 h	20 ppm	
	Time-weighted average exposure limit 8 h	14 mg/m³	
	Short time value	50 ppm	
	Short time value	36 mg/m³	

USA (TLV-ACGIH)

Ammonia	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	25 ppm	
	Short time value (TLV - Adopted Value)	35 ppm	

Germany

Ammoniak	Time-weighted average exposure limit 8 h (TRGS 900)	20 ppm	
	Time-weighted average exposure limit 8 h (TRGS 900)	14 mg/m³	

France

Ammoniac anhydre	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	10 ppm	
	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	7 mg/m³	
	Short time value (VRC: Valeur réglementaire contraignante)	20 ppm	
	Short time value (VRC: Valeur réglementaire contraignante)	14 mg/m³	

UK

Ammonia, anhydrous	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	25 ppm	
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	18 mg/m³	
	Short time value (Workplace exposure limit (EH40/2005))	35 ppm	
	Short time value (Workplace exposure limit (EH40/2005))	25 mg/m³	

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

If applicable and available it will be listed below.

Ammonia (organic and inorganic gases by Extractive FTIR)	NIOSH	3800
Ammonia	NIOSH	6015
Ammonia	NIOSH	6015REV
Ammonia	NIOSH	6016
Ammonia	NON	41

Ammonia	OSHA	ID188

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL - Workers

ammonia

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	47.6 mg/m³	
	Acute systemic effects inhalation	47.6 mg/m³	
	Long-term local effects inhalation	14 mg/m³	
	Acute local effects inhalation	36 mg/m³	
	Long-term systemic effects dermal	6.8 mg/kg bw/day	
	Acute systemic effects dermal	6.8 mg/kg bw/day	

DNEL - General population

ammonia

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	23.8 mg/m³	
	Acute systemic effects inhalation	23.8 mg/m³	
	Long-term local effects inhalation	2.8 mg/m³	
	Acute local effects inhalation	7.2 mg/m³	
	Long-term systemic effects dermal	68 mg/kg bw/day	
	Acute systemic effects dermal	68 mg/kg bw/day	
	Long-term systemic effects oral	6.8 mg/kg bw/day	
	Acute systemic effects oral	6.8 mg/kg bw/day	

PNEC

ammonia

Compartments	Value	Remark
Fresh water	0.0011 mg/l	
Marine water	0.0011 mg/l	
Aqua (intermittent releases)	0.0068 mg/l	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Exhaust gas must be neutralised.

8.2.2 Individual protection measures, such as personal protective equipment

Observe strict hygiene. Keep container tightly closed. Do not eat, drink or smoke during work.

a) Respiratory protection:

Gas mask with filter type K. High vapour/gas concentration: self-contained respirator.

b) Hand protection:

Gloves.

- materials (good resistance)

Butyl rubber, nitrile rubber, tetrafluoroethylene, viton.

- materials (less resistance)

Polyethylene, PVA, PVC.

c) Eye protection:

Protective goggles.

d) Skin protection:

Head/neck protection. Corrosion-proof clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Liquid
Odour	Irritating/pungent odour
	Ammonia odour
Odour threshold	No data available
Colour	Colourless
Particle size	Not applicable (liquid)
Explosion limits	Not applicable
Flammability	Non-flammable
Log Kow	Not applicable (mixture)

Dynamic viscosity	1.280 mPa.s ; 24 °C
	1,288 mPa.s ; 26 °C
Kinematic viscosity	No data available
Melting point	-58 °C
Boiling point	No data available
Flash point	Not applicable
Evaporation rate	No data available
Relative vapour density	No data available
Vapour pressure	483 hPa ; 20 °C
Solubility	water ; Complete
Relative density	No data available
Decomposition temperature	No data available
Auto-ignition temperature	Not applicable
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	No data available

9.2 Other information:

Minimum ignition energy	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity:

No data available.

10.2 Chemical stability:

Stable under normal conditions.

10.3 Possibility of hazardous reactions:

Concentrated solution violent to explosive reaction with many compounds e.g.: with (some) halogens compounds, with (strong) oxidizers and with (some) acids. May be corrosive to metals.

10.4 Conditions to avoid:

Keep away from naked flames/heat.

10.5 Incompatible materials:

Oxidizing agents, (strong) acids, (strong) bases, metals, halogens.

10.6 Hazardous decomposition products:

On heating: release of toxic/corrosive/combustible gases/vapours (ammonia). On burning: release of toxic and corrosive gases/vapours (nitrous vapours).

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

Ammonia aqueous solution (25%)

No (test)data available

ammonia

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	350 mg/kg bw		Rat (male)	Experimental value	Aqueous solution
Dermal						Data waiving	
Inhalation	LC50		28130 mg/m³ air	10 minutes	Rat (male/female)	Experimental value	
Inhalation	LC50		19960 mg/m³ air	20 minutes	Rat (male/female)	Experimental value	
Inhalation	LC50		14170 mg/m³ air	40 minutes	Rat (male/female)	Experimental value	
Inhalation	LC50		9850 mg/m³ air	60 minutes	Rat (male)	Experimental value	
Inhalation	LC50		13770 mg/m³ air	60 minutes	Rat (female)	Experimental value	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

Ammonia aqueous solution (25%)

No (test)data available

ammonia

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye						Data waiving	
Skin	Corrosive	Equivalent to OECD 404	4 h		Rabbit	Experimental value	Aqueous solution
Inhalation (gases)	Irritating				Human	Experimental value	Test data of the pure substance

Conclusion

Causes severe skin burns and eye damage.

Respiratory or skin sensitisation

Ammonia aqueous solution (25%)

No (test)data available

ammonia

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin						Data waiving	
Inhalation						Data waiving	

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

Ammonia aqueous solution (25%)

No (test)data available

ammonia

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	OECD 422	250 mg/kg bw/day	General	No effect	35 day(s)	Rat (male/female)	Read-across
Oral (stomach tube)	LOAEL	OECD 422	750 mg/kg bw/day	General	Overall effects	35 day(s)	Rat (male/female)	Read-across
Oral (diet)	NOAEL	Equivalent to OECD 408	886 mg/kg bw/day		No effect	90 day(s)	Rat (male)	Read-across
Oral (diet)	NOAEL	Equivalent to OECD 408	1975 mg/kg bw/day		No effect	90 day(s)	Rat (female)	Read-across
Oral	NOAEL	Equivalent to OECD 452	256 mg/kg bw/day		No effect	52 weeks (daily)	Rat (male)	Read-across
Oral	NOAEL	Equivalent to OECD 452	284 mg/kg bw/day		No effect	52 weeks (daily)	Rat (female)	Read-across
Dermal								Data waiving
Inhalation	NOEL		61 ppm		No effect	5 weeks (daily)	Pig	Experimental value
Inhalation	LOEL		103 ppm	General	Increased salivation	5 weeks (daily)	Pig	Experimental value
Inhalation (gases)	LOEL	Subchronic toxicity test	119 mg/m³ air	General	Histopathology	18 weeks (6h/day, 5 days/week)	Guinea pig (male)	Weight of evidence

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

Ammonia aqueous solution (25%)

No (test)data available

ammonia

Result	Method	Test substrate	Effect	Value determination
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Escherichia coli	No effect	Experimental value

Mutagenicity (in vivo)

Ammonia aqueous solution (25%)

No (test)data available

ammonia

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	Equivalent to OECD 474		Mouse (male)	Bone marrow	Read-across

Carcinogenicity

Ammonia aqueous solution (25%)

No (test)data available

ammonia

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Oral	NOAEL	Equivalent to OECD 453	3 %	104 week(s)	Rat (male/female)	Read-across		No carcinogenic effect

Reproductive toxicity

Ammonia aqueous solution (25%)

No (test)data available

ammonia

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	Equivalent to OECD 414	100 mg/kg bw/day	23 day(s)	Rabbit	No effect		Read-across
Maternal toxicity	NOAEL	Equivalent to OECD 414	1 mg/kg bw/day	23 day(s)	Rabbit	No effect		Read-across
Effects on fertility	NOAEL (P)	OECD 422	1500 mg/kg bw/day	35 day(s)	Rat (male/female)	No effect		Read-across
	LOAEL (P)	OECD 422	>1500 mg/kg bw/day	35 day(s)	Rat (male/female)	Reproductive performance		Read-across

Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

Ammonia aqueous solution (25%)

No (test)data available

Chronic effects from short and long-term exposure

Ammonia aqueous solution (25%)

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Coughing. Irritation of the respiratory tract. Irritation of the eye tissue. Redness of the eye tissue. Possible inflammation of the respiratory tract. Respiratory difficulties. Affection of the nasal septum.

SECTION 12: Ecological information

12.1 Toxicity:

Ammonia aqueous solution (25%)

No (test)data available

ammonia

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	Other	0.6-1.1 mg/l	96 h	Oncorhynchus mykiss	Flow-through system	Fresh water	Experimental value
Acute toxicity invertebrates	LC50	ASTM E729-80	101 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value
Toxicity algae and other aquatic plants	EC50	Other	2700 mg/l	18 day(s)	Chlorella vulgaris	Static system	Fresh water	Read-across
Long-term toxicity fish	NOEC	OECD 215	< 48 µg/l	31 day(s)	Ictalurus punctatus	Flow-through system	Fresh water	Weight of evidence
Long-term toxicity aquatic invertebrates	LOEC	Other	1.3 mg/l	21 day(s)	Daphnia magna	Flow-through system	Fresh water	Read-across

Classification of the mixture is based on the relevant ingredients of the mixture

Conclusion

Highly toxic to fishes

Toxic to invertebrates (Daphnia)

pH shift

Inhibition of activated sludge

12.2 Persistence and degradability:

Readily biodegradable in water
Biodegradable in the soil

12.3 Bioaccumulative potential:

Ammonia aqueous solution (25%)

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

ammonia

Log Kow

Method	Remark	Value	Temperature	Value determination
		0.23	25 °C	Estimated value

Conclusion

Not bioaccumulative

12.4 Mobility in soil:

No (test)data on mobility of the components available

12.5 Results of PBT and vPvB assessment:

The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances.

12.6 Other adverse effects:

Ammonia aqueous solution (25%)

Global warming potential (GWP)

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

Ground water

Ground water pollutant

ammonia

Ground water

Ground water pollutant

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).
06 02 03* (wastes from the MFSU of bases: ammonium hydroxide). Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Directive 2008/98/EC.

13.1.2 Disposal methods

Recycle/reuse. Remove for physico-chemical/biological treatment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized plant for the destruction, neutralization and elimination of hazardous waste. Use appropriate containment to avoid environmental contamination.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:

UN number	2672

14.2 UN proper shipping name:

Proper shipping name	Ammonia solution

14.3 Transport hazard class(es):

Hazard identification number	80
Class	8
Classification code	C5

14.4 Packing group:

Packing group	III
Labels	8

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	543
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Rail (RID)

14.1 UN number:

UN number	2672

14.2 UN proper shipping name:

Proper shipping name	Ammonia solution

14.3 Transport hazard class(es):

Hazard identification number	80
Class	8
Classification code	C5

14.4 Packing group:

Packing group	III
Labels	8

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	543
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Inland waterways (ADN)

14.1 UN number:

UN number	2672

14.2 UN proper shipping name:

Proper shipping name	Ammonia solution

14.3 Transport hazard class(es):

Class	8
Classification code	C5

14.4 Packing group:

Packing group	III
Labels	8

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	543
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Sea (IMDG/IMSBC)

14.1 UN number:

UN number	2672

14.2 UN proper shipping name:

Proper shipping name	ammonia solution

14.3 Transport hazard class(es):

Class	8

14.4 Packing group:

Packing group	III
Labels	8

14.5 Environmental hazards:

Marine pollutant	P
Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

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

Annex II of MARPOL 73/78	Not applicable, based on available data

Air (ICAO-TI/IATA-DGR)

14.1 UN number:

UN number	2672

14.2 UN proper shipping name:

Proper shipping name	Ammonia solution

14.3 Transport hazard class(es):

Class	8

14.4 Packing group:

Packing group	III
Labels	8

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	A64
Special provisions	A803
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	1 L

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
	No data available

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· ammonia	Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects,2. Articles not complying with paragraph 1 shall not be placed on the market.3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with R65 or H304,4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: “Keep lamps filled with this liquid out of the reach of children”; and, by 1 December 2010, “Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life- threatening lung damage”; b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: “Just a sip of grill lighter may lead to life threatening lung damage”; c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.’

National legislation The Netherlands

Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 02
Waterbezwaarlijkheid	5

National legislation Germany

WGK	2; Classification water polluting based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4)

National legislation France

No data available

National legislation Belgium

No data available

Other relevant data

No data available

15.2 Chemical safety assessment:

A chemical safety assessment has been performed.

SECTION 16: Other information

Labelling according to Directive 67/548/EEC-1999/45/EC (DSD/DPD)

Enumerated in substance list Annex I of Directive 67/548/EEC et sequens

Labels

Corrosive

Dangerous for the environment

R-phrases

34	Causes burns
50	Very toxic to aquatic organisms

S-phrases

(01/02)	(Keep locked up and out of the reach of children)
26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
36/37/39	Wear suitable protective clothing gloves, and eye/face protection
45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
61	Avoid release to the environment. Refer to special instructions/safety data sheets.

Full text of any R-phrases referred to under headings 2 and 3:

R34 Causes burns
R50 Very toxic to aquatic organisms

Full text of any H-statements referred to under headings 2 and 3:

H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive
DPD Dangerous Preparation Directive
CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

Specific concentration limits CLP

ammonia	C ≥ 5 %	STOT SE 3; H335	CLP Annex VI (ATP 0)

Specific concentration limits DSD

ammonia	C ≥ 10 %	C; R34	DSD Annex VI (ATP 0)
	5 % ≤ C < 10 %	Xi; R36/37/38	DSD Annex VI (ATP 0)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.