

SAFETY DATA SHEET

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Ammonium hydroxide 10-35%

SECTION 1. Identification of the substance/mixture and of the company

1.1 Product identifier Ammonium hydroxide 10-35%

1.2 Relevant identified uses of the product and uses advised against

Intended use: Professional use. Electronics chemical.

1.3 Details of the supplier of the safety data sheet

Manufacturer: Sunchem AB
Postadress: Box 69
SE - 433 21 Partille
Land: Sverige
Telefon +46-31-447310

E-mail: purchasing@sunco.se

1.4 Telephone emergency number:

In case of emergency, contact toxicological information, emergency tel 112.
For non-emergency poison information, see:
http://www.who.int/gho/phe/chemical_safety/poisons_centres/en/

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

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

Serious eye damage/eye irritation (Category 1), H318
Skin Corrosion/irritation (Category 1B); H314
Acute toxicity -inhalation (Category 4), H332
Specific target organ toxicity (single exposure) Category 3, H335
Hazardous to the aquatic environment (Category Acute 1), H400
Hazardous to the aquatic environment (Category Chronic 2), H411

2.2 Label elements

Classification according to regulation (EC) No. 1272/2008 (CLP)

Pictogram(s)



Signal word

Danger

Hazard statements

H314 Causes severe skin burns and eye damage.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects
EUH071 Corrosive to respiratory tract

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse cautiously with water for several minutes.
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 or doctor/physician.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P271 - Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P264 - Wash hands, forearms and face thoroughly after handling.
P403+P233 Store in a well ventilated place. Keep container tightly closed.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

Ammonia solution (10-35 %)

2.3 Other hazards

This mixture does not contain any substances that meets the criteria for PBT or vPvB in accordance with Regulation (EC) No. 1907/2006, Annex XIII.

This mixture does not contain substances at $\geq 0,1\%$ with endocrine disrupting properties in accordance with the criteria of the Delegated Regulation (EU) 2017/2100 of the Commission or Regulation (EU) 2018/605 of the Commission.

SECTION 3. Composition/information on ingredients

3.2 Mixtures

Declaration of components according to Regulation (EC) No. 1272/2008

Chemical name	CAS No. EC No.	REACH Reg. No. Index No.	Conc. %	Classification
Ammonia, waterfree	7664-41-7 231-635-3	01-2119488876-14 007-001-00-5	10 - < 35	Flam. Gas 2; H221, Press. Gas; H280, Acute Tox. 3; H331;(ATE: 700

				ppmV), Skin Corr. 1B; H314, Eye Dam. 1; H318, Aquatic Acute 1; H400(M=1), Aquatic Chronic 2; H411 EUH071
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For full text of the H-statements see section 16 "Other information".

SECTION 4. First aid measures

4.1 Description of first aid measures

- General:** In the least doubt or if symptoms persist, seek medical attention.
- Inhalation:** Call a poison center or a doctor if you feel unwell. Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
- Skin contact:** Wash with plenty of soap and water. Take off immediately all contaminated clothing. Get medical attention if any discomfort continues. Chemical burns must be treated by a physician. Rinse skin with water/shower. Immediately call a POISON CENTER/doctor.
- Eye contact:** Get medical advice/attention if you feel unwell. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Continue flushing during transport to hospital. Bring these instructions. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
- Ingestion:** DO NOT induce vomiting. Get medical attention immediately. Rinse nose, mouth and throat with water. Drink plenty of water. Get medical attention immediately!. Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms/effects after inhalation : May cause respiratory irritation. Harmful if inhaled.
- Symptoms/effects after skin contact : Causes severe skin burns and eye damage.
- Symptoms/effects after eye contact : Causes serious eye damage.
- Symptoms/effects after ingestion : If ingested may cause corrosion of gastrointestinal tract.

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment. Consult a doctor and show this safety data sheet.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Use water fog, alcohol resistant foam, powder, or carbon dioxide.

Unsuitable extinguishing media: Water with a full water jet.

5.2 Special hazards arising from the substance or mixture

Non flammable. May intensify fire; oxidiser.

Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Hazardous decomposition products in case of Ammonia or amines (gas and aerosol mists) : Very corrosive gases/vapours/fumes.

5.3 Advice to firefighters

Do not enter fire area without proper personal protective equipment, including respiratory protection. Exercise caution when fighting any chemical fire. Containers close to fire should be removed immediately or cooled with water. Fight fire remotely due to the risk of explosion.

Protection during firefighting : Wear self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation, especially in confined areas. Avoid contact with skin and eyes. Use personal protective equipment as required. Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

Wear appropriate personal protective equipment - see Section 8.
Keep public away from danger area.

Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2 Environmental precautions

Avoid discharges to soil, water or air. Prevent discharges into sewers.

6.3 Methods and material for containment and cleaning up

Dispose of at a licensed waste collection centre.
Take up liquid spill into absorbent material. Post clean with water. Never pour spill back in original packaging for reuse.
Dispose of materials or solid residues at an authorized site.

6.4 Reference to other sections

See Section 8 for personal protection and Section 13 for disposal considerations, respectively.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Corrosive storage (bases/alkalines).

Do not breathe vapours, mist.

Avoid spilling, skin and eye contact.. Use only well-ventilated area. Ensure adequate ventilation. NEVER pour water into this substance; when dissolving or diluting always add it slowly to the water.

Hygiene measures:

Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

Wash contaminated clothing before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Comply with applicable regulations.

Keep cool. Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Only storage in original container or use not corrosive metals.

Incompatible materials: Acids.

7.3 Specific end use(s)

See Section 1.2.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

The national occupational exposure limit values that correspond to Union occupational exposure limit values in accordance with Directive 98/24/EC, including any notations as referred to in Article 2(3) of Commission Decision 2014/113/EU(5);EH40 2020:

Substances	ppm	mg/m ³	Interval	Category	Notes
Ammonia, anhydrous	25	18	8 hours	TWA	
Ammonia anhydrous	35	25	15 minutes	STEL	

8.2 Exposure control

Assigned personal protection equipment is a guideline. A risk assessment of actual risks may lead to other requirements.

8.2.1 Engineering controls

Work in a well-ventilated area. Mechanical ventilation of local exhaust may be required. Eye wash facilities and emergency shower must be available when handling this product.

8.2.2 Personal protection

Do not eat, drink or smoke when using this product. Wash hands after handling.



8.2.2.1 Eye protection

Wear protective goggles according EN standard 166.

8.2.2.2 Hand protection

Use protective gloves according EN standard 374. Recommended glove barrier materials include nitrile rubber.

Layer thickness: Nitrile rubber: >0,40 mm. Breakthrough time: >480 minutes.

Skin protection

In case of handling large quantities or in the event of spatter, wear protective clothes, i.e. an apron.

8.2.2.3 Respiratory protection

In case of inadequate ventilation, respiratory protection according EN standard 149 and EN 14387 (full-face mask with gas filter type K) or breathing apparatus may be required.

8.2.2.4 Thermal hazard

No thermal hazard.

8.3 Environmental exposure control

See Section 6.2.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

a	Physical state	Liquid
b	Colour	Colourless
c	Odour/odour threshold	Stinging, ammonia
d	Melting point/Freezing point	No data available/not applicable
e	Initial boiling point/boiling range	No data available/not applicable
f	Flammability (solid, gas)	No data available/not applicable
g	Lower and upper explosion limit	No data available/not applicable
h	Flash point	No data available/not applicable
i	Auto-ignition temperature	No data available/not applicable
j	Decomposition temperature	No data available/not applicable
k	pH	> 14
l	Kinematic viscosity	No data available/not applicable
m	Solubility	Very soluble in water
n	Partition coefficient (n-octanol/water)	No data available/not applicable
o	Vapour pressure	0,53 - < 0,75 bar (21°C)
p	Density and/or relative density	0,895 - < 0,905 g/cm ³
q	Relative vapour density	No data available/not applicable

r	Particle characteristics	No data available/not applicable
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9.2 Other information

No more specific or information about safety characteristics.

SECTION 10. Stability and reactivity

10.1 Reactivity

Thermal decomposition generates : Corrosive vapours.

10.2 Chemical stability

Stable under recommended storage and usage conditions.

10.3 Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. NEVER add water to acid!

10.4 Conditions to avoid

Heat. Contact with incompatible materials.

10.5 Incompatible materials

Oxidizing agent. Halogens. Nitromethane. Heavy metal compounds. The solution is strongly alkaline and reacts with strong acids under heat generation.

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition generates : Corrosive vapours.

SECTION 11. Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

No toxicological tests have been performed on the product. The product is harmful if inhaled. (note: according to harmonized classification, but unclear regarding LD50 value/ATE).

General toxicological information

Hazardous components CAS no.	Value Type	Value	Route of exposure	Exposure time	Species	Method
Ammonia, waterfree	LD50	350 mg/kg	Oral		Rat	
Ammonia, waterfree	LD50	4,29 mg/kg	Inhalation	4h	Rat	

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity: Harmful if inhaled.

Skin corrosion/irritation: Causes severe skin burns and eye damage.

Serious eye damage/eye irritation:	Causes serious eye damage.
Respiratory or skin sensitization:	Not classified
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Not classified
Reproductive toxicity:	Not classified
STOT – single exposure:	May cause respiratory irritation.
STOT – repeated exposure:	Not classified
Aspiration hazard:	Not classified

11.2 Information on other hazards

This mixture does not contain substances at $\geq 0,1\%$ with endocrine disrupting properties in accordance with the criteria of the Delegated Regulation (EU) 2017/2100 of the Commission or Regulation (EU) 2018/605 of the Commission.

SECTION 12. Ecological information

12.1 Toxicity

This product is classified as very toxic to aquatic life and toxic to aquatic life with long lasting effects.

Hazardous components CAS no.	Value Type	Value	Route of Exposure	Exposure Time	Species	Method
Ammonia, waterfree	LC50	0,083mg/l	Vatten	96 h	Fish	
Ammonia, waterfree	EC50	10-100 mg/l	Vatten	48 h	Daphnia	

12.2 Persistence and degradability

Components are biodegradable

12.3 Bioaccumulative potential

No bioaccumulation Log Pow: -2,66

12.4 Mobility in soil

Components are water soluble and may spread in water system and soil.

12.5 Results of PBT and vPvB assessment

The substance/mixture does not fulfil the criteria to be identified as PBT substance or vPvB substance.

12.6 Endocrine disrupted properties

This mixture does not contain substances at $\geq 0,1\%$ with endocrine disrupting properties in accordance with the criteria of the Delegated Regulation (EU) 2017/2100 of the Commission or Regulation (EU) 2018/605 of the Commission.

12.7 Other adverse effects

No data available.

SECTION 13. Disposal considerations

13.1 Waste treatment methods

Dispose according to Directive 2008/98/EC on waste (Waste Framework Directive) and in compliance with local and national legislation. Do not allow to enter sewers. Transfer to a waste container and send for destruction.

Packaging may still contain hazardous residues and disposal should be undertaken by a licensed waste contractor. Any disposal practice must comply with local and national laws and regulations.

Suggested EWC codes

16 03 03* - Inorganic waste containing hazardous substances.

SECTION 14. Transport information

14.1 UN number

ADR	2672
RID	2672
IMDG	2672
ICAO/IATA	2672

14.2 UN proper shipping name

ADR	AMMONIA SOLUTION
RID	AMMONIA SOLUTION
IMDG	AMMONIA SOLUTION
ICAO/IATA	AMMONIA SOLUTION

14.3 Transport hazard class(es)



ADR	8
RID	8
ADN	8
IMDG	8
ICAO/IATA	8

14.4 Packaging group

ADR	III
RID	III
IMDG	III
ICAO/IATA	III

14.5 Environmental hazards

ADR	YES
RID	YES
IMDG	YES
ICAO/IATA	YES

14.6. Special precautions for user

Classification code (ADR)	:C5
Special provisions (ADR)	:543
Limited quantities (ADR)	:5L
Excepted quantities (ADR)	:E1



Orange plates	:	80
EAC code	:	2R

Transport by sea

EmS-No. (Fire)	:F-A
EmS-No. (Spillage)	:S-B

Air transport

PCA Excepted quantities (IATA)	:E1
PCA Limited quantities (IATA)	:Y841
Special provisions (IATA)	:A64, A803

Inland waterway transport

Classification code (ADN)	:C5
Special provisions (ADN)	:543
Limited quantities (ADN)	:5 L
Excepted quantities (ADN)	:E1

Rail transport

Special provisions (RID)	:543
Excepted quantities (RID)	:E1
Hazard identification number (RID)	:80

14.7 Maritime transport in bulk according to IMO instruments.

Not applicable

SECTION 15. Regulatory information

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

Regulation (EC) No 1272/2008 (CLP) of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures. Latest update of legal requirements 23/10/2024 of CLP regulation.

Regulation (EC) No 1907/2006 (REACH) of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and

Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC. Latest update 28th nov 2024.

Regulation (EU) 2020/878 of the European Commission, supplement for REACH appendix II.

The national occupational exposure limit values that correspond to Union occupational exposure limit values in accordance with Directive 98/24/EC, including any notations as referred to in Article 2(3) of Commission Decision 2014/113/EU(5); EH40/2005: Workplace exposure limits updates 2020.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16. Other information

Version: 5.1

Explanations to abbreviations in Section 3

H221	Flammable gas.
H280	Contains gas under pressure; may explode if heated.
H314.	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H314	Causes severe skin burns and eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects
EUH071	Corrosive to respiratory tract

Explanations to abbreviations in Section 14

ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
RID	Règlement concernant le transport international ferroviaire de marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by rail)
IMDG	IMDG code (International Maritime Dangerous Goods Code)
ICAO	International Civil Aviation Organization (ICAO, 999 University Street, Montreal, Quebec H3C 5H7, Canada)
IATA	International Air Transport Association

This safety data sheet has been produced and reviewed by Chemgroup Scandinavia AB.