Ammonium hydroxide solution

30501-1L

Version 1.9 Revision Date 09.04.2026

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

1.1. Product identifier

Product name	:	Ammonium hydroxide solution
SDS-number	:	000000020199
Type of product	:	Mixture
Remarks	:	SDS according to Art. 31 of Regulation (EC) 1907/2006.

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

Use of the Substance/Mixture	:	Laboratory chemicals
Uses advised against	:	none

1.3. Details of the supplier of the safety data sheet

Company	:	Honeywell Specialty Chemicals Seelze GmbH Wunstorfer Straße 40 30926 Seelze Germany	Solstice Advanced Materials US, Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA
Telephone	:	(49) 5137-999 0	
For further information, please contact:	:	SafetyDataSheet@solstice.com	

1.4. Emergency telephone number

Emergency telephone number	:	+1-703-527-3887 (ChemTrec-Transport) +1 303-739-1378 (Medical)
	:	United Kingdom: (+44) 844 892 0111

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Skin corrosion Category 1B

H314 Causes severe skin burns and eye damage.
Specific target organ toxicity - single exposure Category 3 - Respiratory system
H335 May cause respiratory irritation.
Short-term (acute) aquatic hazard Category 1
H400 Very toxic to aquatic life.
Long-term (chronic) aquatic hazard Category 2
H411 Toxic to aquatic life with long lasting effects.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms	:		
Signal word	:	Danger	
Hazard statements	:	H314	Causes severe skin burns and eye damage.
		H335	May cause respiratory irritation.
		H410	Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
		P280	Wear protective gloves/protective clothing/eye protection/face protection.
		P284	Wear respiratory protection.
		P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
		P302 + P352	IF ON SKIN: Wash with plenty of water.
		P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P308 + P313	IF exposed or concerned: Get medical advice/ attention.
Hazardous components	:	Ammonia, aqueous solution	

which must be listed on the label

2.3. Other hazards

Avoid inhalation of vapour or mist. Causes respiratory tract irritation. This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Product does not contain substances that are persistent, mobile, and toxic (PMT/vPvM) at levels of 0.1 % or higher.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical name	CAS-No. Index-No. EC-No.	Classification 1272/2008	Concentration	Remarks
Ammonia, aqueous solution	1336-21-6 007-001-01-2 215-647-6	Acute Tox. 4; H332; Inhalation Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT SE 3; H335; Respiratory system Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH071	>= 25 % - < 50 %	M(Aquatic Acute) = 1 M(Aquatic Chronic) = 1 STOT SE 3; H335:>= 5 % STOT SE 3; H335:>= 5 %

Remaining components of this product are non-hazardous and/or are present at concentrations below reportable limits.

Occupational Exposure Limit(s), if available, are listed in Section 8.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:

First aider needs to protect himself. Immediately take off contaminated clothing and rinse body with plenty of water.

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician immediately.

Skin contact:
Wash off immediately with soap and plenty of water. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician.

Eye contact:
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.

Ingestion:
A person suspected to have swallowed the substance who is conscious should be given water to drink. Take to a doctor immediately together with this card

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

Inhaled corrosive substances can lead to a toxic oedema of the lungs., Causes skin burns., Small amounts splashed into eyes can cause irreversible tissue damage and blindness., If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach., May cause respiratory impairment and lung damage.

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

Treat symptomatically.

See Section 11 for more detailed information on health effects and symptoms. :

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
Water spray
Foam
Carbon dioxide (CO2)
Dry powder

Extinguishing media which shall not be used for safety reasons:
High volume water jet

5.2. Special hazards arising from the substance or mixture

Ammonia gas may be liberated at high temperatures.
Vapours may form explosive mixtures with air.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.
No unprotected exposed skin areas.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so.

6.3. Methods and materials for containment and cleaning up

Soak up with inert absorbent material.
Pick for disposal in tightly closed containers

Personal protection through wearing a tightly closed chemical protection suit and a self-contained breathing apparatus.

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:
Exhaust ventilation at the object is necessary. Use only alkali-proof equipment.

Advice on protection against fire and explosion:
Keep away from heat and sources of ignition. Ammonia gas may be liberated at high temperatures. Vapours may form explosive mixture with air. The product itself does not burn.

Hygiene measures:
Keep working clothes separately. Separate rooms are required for washing, showering and changing clothes. Take off all contaminated clothing immediately. Wash hands before breaks and at the end of workday. When using do not eat or drink.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions:
Store in original container. Keep in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
Ammonia, aqueous solution	EH40 OES TWA	18 mg/m3 25 ppm		
Ammonia, aqueous solution	EH40 OES STEL	25 mg/m3 35 ppm		
Ammonia, aqueous solution	EH40 WEL TWA	18 mg/m3 25 ppm		
Ammonia, aqueous solution	EU ELV STEL	36 mg/m3 50 ppm		Indicative
Ammonia, aqueous solution	EU ELV TWA	14 mg/m3 20 ppm		Indicative
Ammonia, aqueous solution	EH40 WEL STEL	25 mg/m3 35 ppm	15 minutes	
Ammonia, aqueous solution	EU ELV STEL	36 mg/m3 50 ppm		Indicative
Ammonia, aqueous solution	EU ELV TWA	14 mg/m3 20 ppm		Indicative
Ammonia, aqueous solution	EH40 WEL TWA	18 mg/m3 25 ppm		
Ammonia, aqueous solution	EH40 WEL STEL	25 mg/m3 35 ppm	15 minutes	
Ammonia, aqueous solution	EU SCOELS TWA	14 mg/m3 20 ppm	8 hours	
Ammonia, aqueous solution	EU SCOELS STEL	36 mg/m3 50 ppm	15 minutes	

EH40 OES - UK. COSHH Exposure Limit Values
TWA - Time weighted average
EH40 OES - UK. COSHH Exposure Limit Values

STEL - Short term exposure limit

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
Ammonia, aqueous solution	Workers / Acute systemic effects		6,8mg/kg bw/d	Skin contact	
Ammonia, aqueous solution	Workers / Acute systemic effects		47,6 mg/m3	Inhalation	
Ammonia, aqueous solution	Workers / Long-term systemic effects		47,6 mg/m3	Inhalation	
Ammonia, aqueous solution	Workers / Acute local effects		36 mg/m3	Inhalation	
Ammonia, aqueous solution	Workers / Long-term local effects		14 mg/m3	Inhalation	
Ammonia, aqueous solution	Workers / Long-term systemic effects		6,8mg/kg bw/d	Skin contact	
Ammonia, aqueous solution	Consumers / Long-term systemic effects		23,8 mg/m3	Inhalation	
Ammonia, aqueous solution	Consumers / Acute systemic effects		23,8 mg/m3	Inhalation	
Ammonia, aqueous solution	Consumers / Long-term local effects		2,8 mg/m3	Inhalation	
Ammonia, aqueous solution	Consumers / Acute local effects		7,2 mg/m3	Inhalation	

Ammonia, aqueous solution	Consumers / Long-term systemic effects		6,8mg/kg bw/d	Skin contact	
Ammonia, aqueous solution	Consumers / Acute systemic effects		6,8mg/kg bw/d	Skin contact	
Ammonia, aqueous solution	Consumers / Long-term systemic effects		6,8mg/kg bw/d	Ingestion	
Ammonia, aqueous solution	Consumers / Acute systemic effects		6,8mg/kg bw/d	Ingestion	

Component	Environmental compartment / Value	Remarks
Ammonia, aqueous solution	Fresh water: 0,00135 mg/l	
Ammonia, aqueous solution	Marine water: 0,00135 mg/l	
Ammonia, aqueous solution	Soil: 0,0221 mg/kg dw	

8.2. Exposure controls

Occupational exposure controls

Do not breathe vapours/dust.
Take off all contaminated clothing immediately.
Wash hands before breaks and at the end of workday.
The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Engineering measures
Use with local exhaust ventilation.

Personal protective equipment
Respiratory protection:

In the case of vapour formation use a respirator with an approved filter.
Recommended Filter type:
Ammonia/amines type

Respiratory protection:
In the case of vapour formation use a respirator with an approved filter.

Hand protection:
Glove material: Viton®
Break through time: > 480 min
Glove thickness: 0,7 mm
Vitoject® 890
Gloves must be inspected prior to use.
Replace when worn.
Remarks:Supplementary note: The specifications are based on information and tests from similar substances by analogy.
Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.
Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer reccomends to use the chemical protective glove in practice not longer than 50% of the recomended permeation time.
Manufacturer´s directions for use should be observed because of great diversity of types .
Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:
Safety goggles

Skin and body protection:
Protective suit

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

(a) Physical state	:	liquid
(b) Colour	:	colourless

(c) Odour	:	stinging ammoniacal
(d) Melting point/freezing point	:	-92 °C
(e) Boiling point/boiling range	:	37,7 °C at 1.013 hPa
(f) Flammability	:	Not applicable
(g) Lower and upper explosion limit	:	Lower explosion limit 15 %(V)
	:	Upper explosion limit 30,2 %(V)
(h) Flash point	:	Not applicable
(i) Auto-ignition temperature	:	630 °C 651 °C
(j) Decomposition temperature	:	No decomposition if used as directed.
(k) pH	:	alkaline (undiluted)
(l) Viscosity, kinematic	:	1,3 mm2/s
(m) Solubility(ies)	:	Water solubility: completely miscible
(n) Partition coefficient: n-octanol/water	:	log Pow -0,64
(o) Vapour pressure	:	1.900 hPa at 50 °C
		837 hPa at 20 °C

(p) Density and / or relative density	:	ca. 0,90 g/cm3 at 20 °C
(q) Bulk density	:	Not applicable
(q) Relative vapour density	:	No data available
(r) Particle characteristics	:	No data available

9.2 Other Information

Polymer characteristics	:	No data available

Information regarding ignition temperature, applies only to the pure substance.

Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Evaporation rate	:	No data available
Viscosity, dynamic	:	No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under recommended storage conditions.

10.2. Chemical stability

No decomposition if used as directed.

10.3. Possibility of hazardous reactions

Hazardous polymerisation does not occur.

10.4. Conditions to avoid

Protect from heat/overheating.

10.5. Incompatible materials

Acids
Halogens

10.6. Hazardous decomposition products

Ammonia gas may be liberated at high temperatures.

SECTION 11: Toxicological information

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

(a) Acute toxicity

Acute oral toxicity:
Toxicity is determined by the corrosivity of the product.

Acute dermal toxicity:
Toxicity is determined by the corrosivity of the product.

Acute inhalation toxicity:
Toxicity is determined by the corrosivity of the product.

Acute toxicity (other routes of administration):
No data available

(b) Skin corrosion/irritation:
Species: Rabbit
Classification: Corrosive
Method: OECD Test Guideline 404

(c) Serious eye damage/eye irritation:
Species: Rabbit
Classification: Corrosive

(d) Respiratory or skin sensitisation:
Species: Guinea pig
Classification: non-sensitizing

(e) Germ cell mutagenicity:
Test Method: Ames test
Result: negative
Method: OECD Test Guideline 471

Test Method: Micronucleus test
Species: Mouse
Method: OECD Test Guideline 474
Test substance: REACH dossier “read-across”
Result: negative

(g) Reproductive toxicity:
Method: OECD Test Guideline 422
Species: Rat
Route of Application: Oral
General Toxicity - Parent: NOAEL: 408 mg/kg bw/d
Species: Rabbit
Route of Application: Oral
Remarks: Did not show teratogenic effects in animal experiments.
(h) STOT-single exposure:
No data available

(i) STOT - repeated exposure:
Species: Rat
Application Route: Inhalation
Exposure time: 50 d
NOAEL: 0,035 mg/kg

(j) Aspiration hazard:
No data available

11.2. Information on other hazards

Endocrine disrupting properties
No data available

Other information:
Risk of serious damage to the lungs (by inhalation).

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:
LC50
Species: Oncorhynchus mykiss (rainbow trout)
Value: 0,89 mg/l
Exposure time: 96 h

LC50
Species: Fish
Value: 0,89 mg/l
Exposure time: 96 h
Test substance: Ammonia

Lowest Observed Effect Concentration
Species: Oncorhynchus mykiss (rainbow trout)
Value: 0,022 mg/l
Exposure time: 73 d
Test substance: REACH dossier “read-across”

Toxicity to aquatic plants:
EC50
static test
Species: Chlorella vulgaris (Fresh water algae)
Value: 2.700 mg/l
Exposure time: 18 d

Toxicity to aquatic invertebrates:
LC50
Species: Daphnia magna (Water flea)
Value: 101 mg/l
Exposure time: 48 h

Chronic toxicity to aquatic invertebrates:
NOEC
Species: Daphnia magna (Water flea)
Value: 0,79 mg/l
Test substance: REACH dossier “read-across”

12.2. Persistence and degradability

Biodegradability:
Not applicable

12.3. Bioaccumulative potential

Bioaccumulation is unlikely.

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Product does not contain substances that are persistent, mobile, and toxic (PMT/vPvM) at levels of 0.1 % or higher.

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:
Dispose according to legal requirements.

Packaging:
Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:
Provisions relating to waste:
EC Directive 2006/12/EC; 2008/98/EEC
Regulation No. 1013/2006
For personal protection see section 8.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID:2672 IMDG:2672 IATA:2672

14.2 UN proper shipping name

ADR/RID:AMMONIA SOLUTION
IMDG:AMMONIA SOLUTION

IATA:Ammonia solution

14.3 Transport hazard class(es)

ADR/RID:8 IMDG: 8 IATA: 8

14.4 Packaging group

ADR/RID:III IMDG: III IATA: III

14.5 Environmental hazards

ADR/RID: yes Marine pollutant: yes

14.6 Special precautions for user

IMDG Code segregation group (SGG18) – ALKALIS,

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

Basis	Value	Remarks
Directive 2012/18/EC Listed in Regulation : E1: Hazardous to the aquatic environment Number in Regulation: 1.3.1	**Quantity**: 100.000 kg **Quantity**: 200.000 kg	
Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of ≥ 0.1 % (w/w).

Other inventory information

USA. List of Active Substances on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory, as amended
On TSCA Inventory

Australia. Inventory of Industrial Chemicals (AIIC), as amended
On the inventory, or in compliance with the inventory

Canada. Domestic Substances List (DSL), as amended
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory (TCSI)
On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

Ammonia, aqueous solution	:	H332	Harmful if inhaled.
		H314	Causes severe skin burns and eye damage.
		H318	Causes serious eye damage.
		H335	May cause respiratory irritation.
		H400	Very toxic to aquatic life.
		H410	Very toxic to aquatic life with long lasting effects.

EUH071 Corrosive to the respiratory tract.

Further information

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:
EC European Community
CAS Chemical Abstracts Service
DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very biaccumulative substance
PBT Persistent, bioaccmulative und toxic substance

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