

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/21/2024

Reviewed on 05/21/2024

1 Identification

- **Product identifier**
- **Trade name:** Ammonium Hydroxide 28-30% w/w Reagent ACS grade *Special testing performed
- **Article number:** MID251
- **CAS Number:**
1336-21-6
- **EC number:**
215-647-6
- **Index number:**
007-001-01-2
- **Application of the substance / the mixture** General laboratory solution
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Aqua Solutions, Inc.
6913 Highway 225
DEER PARK, TX 77536
USA
800-256-2586
- **Information department:**
Technical Coordinator
Sherman Nelson shermann@aquasolutions.org
- **Emergency telephone number:**
Chemtrec: 800-424-9300
Canutec: 613-996-6666



2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

Corrosive to Metals 1
Skin Corrosion 1B
Eye Damage 1

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.



GHS07

Acute Toxicity - Oral 4
Specific Target Organ Toxicity - Single Exposure 3

H302 Harmful if swallowed.

H335 May cause respiratory irritation.

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05 GHS07

- **Signal word** *Danger*

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/21/2024

Reviewed on 05/21/2024

Trade name: Ammonium Hydroxide 28-30% w/w Reagent ACS grade *Special testing performed

(Contd. of page 1)

- **Hazard statements**

May be corrosive to metals.
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause respiratory irritation.

- **Precautionary statements**

Keep only in original container.
Do not breathe dusts or mists.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Store in corrosive resistant container with a resistant inner liner.
Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

* 3 Composition/information on ingredients

- **Chemical characterization: Substances**

- **CAS No. Description**

CAS: 1336-21-6 Ammonium Hydroxide

- **Identification number(s)**

- **EC number:** 215-647-6

- **Index number:** 007-001-01-2

US

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/21/2024

Reviewed on 05/21/2024

Trade name: Ammonium Hydroxide 28-30% w/w Reagent ACS grade *Special testing performed

(Contd. of page 2)

4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

- **After swallowing:**

Immediately call a doctor.

Drink copious amounts of water and provide fresh air. Immediately call a doctor.

- **Information for doctor:**

- **Most important symptoms and effects, both acute and delayed** No further relevant information available.

- **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**

- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

- **Special hazards arising from the substance or mixture** No further relevant information available.

- **Advice for firefighters**

- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

- **Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

- **Methods and material for containment and cleaning up:**

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

Use neutralizing agent.

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

- **Protective Action Criteria for Chemicals**

- **PAC-1:** 61 ppm

- **PAC-2:** 330 ppm

- **PAC-3:** 2,300 ppm

7 Handling and storage

- **Handling:**

- **Precautions for safe handling** No special precautions are necessary if used correctly.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/21/2024

Reviewed on 05/21/2024

Trade name: Ammonium Hydroxide 28-30% w/w Reagent ACS grade *Special testing performed

(Contd. of page 3)

- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
- **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

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**

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

- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Protective work clothing

US

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/21/2024

Reviewed on 05/21/2024

Trade name: Ammonium Hydroxide 28-30% w/w Reagent ACS grade *Special testing performed

(Contd. of page 4)

9 Physical and chemical properties

· Information on basic physical and chemical properties	
· General Information	
· Appearance:	
Form:	Liquid
Color:	Clear
· Odor: Characteristic	
· Odor threshold: Not determined.	
· pH-value: Not determined.	
· Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· Flash point: Not applicable.	
· Flammability (solid, gaseous): Not applicable.	
· Decomposition temperature: Not determined.	
· Ignition temperature: Not determined.	
· Danger of explosion: Product does not present an explosion hazard.	
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure: Not determined.	
· Density at 20 °C (68 °F): 0.89 g/cm ³ (7.42705 lbs/gal)	
· Relative density Not determined.	
· Vapor density Not determined.	
· Evaporation rate Not determined.	
· Solubility in / Miscibility with	
Water at 20 °C (68 °F):	571 g/l
· Partition coefficient (n-octanol/water): Not determined.	
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Other information No further relevant information available.	

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

US

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/21/2024

Reviewed on 05/21/2024

Trade name: Ammonium Hydroxide 28-30% w/w Reagent ACS grade *Special testing performed

(Contd. of page 5)

11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

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

Oral	LD50	500 mg/kg (ATE)
------	------	-----------------

- **Primary irritant effect:**

- **on the skin:** Caustic effect on skin and mucous membranes.

- **on the eye:**

- Strong caustic effect.

- Strong irritant with the danger of severe eye injury.

- **Sensitization:** No sensitizing effects 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.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)** Substance is not listed.

- **NTP (National Toxicology Program)** Substance is not listed.

- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

- Water hazard class 2 (Assessment by list): hazardous for water

- Do not allow product to reach ground water, water course or sewage system.

- Must not reach bodies of water or drainage ditch undiluted or unneutralized.

- Danger to drinking water if even small quantities leak into the ground.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

- Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

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

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

US

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS




Printing date 05/21/2024

Reviewed on 05/21/2024

Trade name: Ammonium Hydroxide 28-30% w/w Reagent ACS grade *Special testing performed

(Contd. of page 6)

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	UN2672
<ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG · IATA 	<p>Ammonia solution</p> <p>AMMONIA SOLUTION, MARINE POLLUTANT</p> <p>AMMONIA SOLUTION</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<div style="text-align: center;">  <p>CORROSIVE 8</p> </div> <p>8 Corrosive substances</p> <p>8</p>
<ul style="list-style-type: none"> · IMDG 	<div style="text-align: center;">  </div> <p>8 Corrosive substances</p> <p>8</p>
<ul style="list-style-type: none"> · IATA 	<div style="text-align: center;">  <p>8</p> </div> <p>8 Corrosive substances</p> <p>8</p>
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	III
<ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: 	<p>Environmentally hazardous substance, liquid; Marine Pollutant</p> <p>No</p> <p>Symbol (fish and tree)</p>
<ul style="list-style-type: none"> · Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Stowage Code · Segregation Code 	<p>Warning: Corrosive substances</p> <p>20</p> <p>F-C,S-U</p> <p>(SGG18) Alkalis</p> <p>A</p> <p>SW2 Clear of living quarters.</p> <p>SW5 If under deck, stow in a mechanically ventilated space.</p> <p>SG35 Stow "separated from" SGG1-acids</p>
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.

(Contd. on page 8)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/21/2024

Reviewed on 05/21/2024

Trade name: Ammonium Hydroxide 28-30% w/w Reagent ACS grade *Special testing performed

(Contd. of page 7)

· Transport/Additional information:

· DOT

· Quantity limitations

On passenger aircraft/rail: 5 L

On cargo aircraft only: 60 L

· Hazardous substance:

1000 lbs, 454 kg

· IMDG

· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· UN "Model Regulation":

UN 2672 AMMONIA SOLUTION, 8, III

15 Regulatory information

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

No further relevant information available.

· Sara

· Section 355 (extremely hazardous substances): Substance is not listed.

· Section 313 (Specific toxic chemical listings): Substance is listed.

· TSCA (Toxic Substances Control Act): ACTIVE

· Hazardous Air Pollutants Substance is not listed.

· Proposition 65

· Chemicals known to cause cancer: Substance is not listed.

· Chemicals known to cause reproductive toxicity for females: Substance is not listed.

· Chemicals known to cause reproductive toxicity for males: Substance is not listed.

· Chemicals known to cause developmental toxicity: Substance is not listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency) Substance is not listed.

· TLV (Threshold Limit Value) Substance is not listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.

· GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms



GHS05

GHS07

· Signal word Danger

· Hazard statements

May be corrosive to metals.

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause respiratory irritation.

· Precautionary statements

Keep only in original container.

Do not breathe dusts or mists.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/21/2024

Reviewed on 05/21/2024

Trade name: Ammonium Hydroxide 28-30% w/w Reagent ACS grade *Special testing performed

(Contd. of page 8)

Wear protective gloves/protective clothing/eye protection/face protection.
 If swallowed: Call a poison center/doctor if you feel unwell.
 If swallowed: Rinse mouth. Do NOT induce vomiting.
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Immediately call a poison center/doctor.
 Specific treatment (see on this label).
 Wash contaminated clothing before reuse.
 Absorb spillage to prevent material damage.
 Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.
 Store in corrosive resistant container with a resistant inner liner.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Environment protection department.

- **Contact:**

Date of Preparation / Last Revision:

- **Date of preparation / last revision**

Revision 1.2, 05/21/2024: Reviewed SDS for accuracy. MH/STN

Creation date for SDS 08-29-2014. STN

05/21/2024

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Corrosive to Metals 1: Corrosive to metals – Category 1

Acute Toxicity - Oral 4: Acute toxicity – Category 4

Skin Corrosion 1B: Skin corrosion/irritation – Category 1B

Eye Damage 1: Serious eye damage/eye irritation – Category 1

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

- *** Data compared to the previous version altered.**