Printing date 05/21/2024

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Reviewed on 05/21/2024

1 Identification         • Product identifier         • Trade name: Ammonium Hydroxide 20% vio Solution         • Article number: 0440         • Details of the supplier of the safety data sheet         • Manufacturer/Supplier: Aqua Solutions, Inc. 6013 Highway 225         • DEER PARK, TX 77536         USA 800-256-2586         • Information department: Technical Coordinator         • Sherman Neison sherman@@aquasolutions.org         • Emergency telepione number: Charntree: Non-349-6300         • Canstification of the substance or mixture         • Molecular Stememan Neison Sherman Neison Actionation Charntree: 500-349-6300         • Classification of the substance or mixture         • Molecular Stememan Neison Actionation Charntree: 500-349-6300         • Shin Corrosion IB       H314 Causes servere skin burns and eye damage.         Eye Damage 1       H318 Causes serious cye damage.         • Molecular Stements       H318 Causes serious cye damage.         • Label elements       Harcard (stelements The product is classified and labeled according to the Globally Harmonized System (GHS).         • Lazard foregrams       GHS05         • Harard Adterming components of labeling: Ammonium Hydroxide       Harard statements Causes server skin burns and eye damage.         • Harard statements Causes server skin burns and eye damage.       Harard statements Causes server skin burns and eye dam		
<ul> <li>Frade name: <u>Ammonium Hydroxide</u> <u>20% vk Solation</u></li> <li>Article number: 0446</li> <li>Details of the supplier of the safety data sheet</li> <li>Manufacturer/Supplier: Agua Solutions, Inc.</li> <li>Spl3 Highway 225 DER PARK, TX 77536 USA 800-256-2586</li> <li>Information department: Technical Coordinator Sherman Nelson shermann@aquasolutions.org</li> <li>Emergency telephone number: Chemiter: 613-996-6666</li> <li>2 Hazard(s) identification</li> <li>Classification of the substance or mixture with a substance or mixture</li> <li>Of Stor Corrosion</li> <li>Skin Corrosion 1B Skin Corrosion 1B Histo Courses service service with burns and eye damage. Eye Damage 1 Histo Causes services eye damage.</li> <li>Eye Damage 1 Histo Causes services eye damage.</li> <li>Eye Damage 1 Histo Causes services eye damage.</li> <li>Eye Controsion</li> <li>Skin Corrosion 1B Skin Corrosion 1B Skin Corrosion 1B Skin Corrosion 1B Skin Corrosion 1B Skin Corrosion 1B Science of the substance or mixture</li> <li>Of Stor Corrosion</li> <li>Skin Corrosion 1B Stabe lements</li> <li>Chased elements The product is classified and labeled according to the Globally Harmonized System (GHS).</li> <li>Lazard fuccerants</li> <li>Of Signal word Damger</li> <li>Signal word</li></ul>	I Identification	
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$\frac{20^{\circ} \text{ wy Solution}}{2}$ A rticle number: 0446 $\frac{1}{2} \text{ Manufacturer/Supplier:} \\ \text{Aqual Solutions, Inc.} \\ 0013 flightway 225 \\ DEER PARK, TX 77350 \\ USA \\ 800-236-2586 \\\frac{1}{2} \text{ Mormation department:} \\ \text{Technical Coordinator} \\ \text{Sherman Nelson shermann@aquasolutions.org} \\\frac{1}{2} \text{ Manufacturer/Supplier:} \\ \text{Autorial Coordinator} \\ \text{Sherman Nelson shermann@aquasolutions.org} \\\frac{1}{2} \text{ Mormation department:} \\ \text{Technical Coordinator} \\ \text{Sherman Nelson shermann@aquasolutions.org} \\\frac{1}{2} \text{ Moregan depart deplone number:} \\ \text{Chemitre: 800-424-9300} \\ \text{Cansification of the substance or mixture} \\ \hline & & & & & & & & & & & & & & & & & &$	·	
<ul> <li>Article number: 0446</li> <li>Details of the supplier of the safety data sheet</li> <li>Manufacturer?73736</li> <li>Maya Solutions, Inc.</li> <li>0913 Highway 225</li> <li>DEER PARK, TX 77376</li> <li>USA</li> <li>800-255-2586</li> <li><b>Information department:</b> Technical Coordinator</li> <li>Sherman Neslons sherman@aquasolutions.org</li> <li>Perregency telephone number:</li> <li>Chomics: 800-243-9300</li> <li>Canute:: 613-996-6666</li> </ul> <b>2 Hazard(s) identification</b> Star Corrosion 1B <ul> <li>H314 Causes severe skin burns and eye damage.</li> <li>Fye Damage 1</li> <li>H318 Causes serious eye damage.</li> </ul> Ever Damage 1 <ul> <li>H318 Causes serious eye damage.</li> <li>H318 Causes serious eye damage.</li> <li>H318 Causes serious eye damage.</li> <li>Haid elements</li> <li>Hard statements</li> <li>Hard statements of labeling:</li> <li>Amonian Hydroxide</li> </ul> Signal word Danger <ul> <li>Acaused elements</li> <li>GHS07</li> <li>Signal word Danger</li> <li>Signal word Danger</li> <li>Hard-determining components of labeling:</li> <li>Amonian Hydroxide</li> <li>Guass erespiratory irritation.</li> <li>Signal word Danger</li> <li>Hard-determining components of labeling:</li> <li>Amonian Hydroxide</li> <li>Hard statements</li> <li>Causes erespiratory irritation.</li> <li>Signal word Danger</li> <li>Hard-determining components of labeling:</li> <li>Amonian Hydroxide</li> <li>Hard statements</li> <li>Causes erespiratory irritation.</li> <li>Hard statements</li> <li>Causes serest kin burns and eye damage.</li> <li>Hard statements</li> <li>Causes erespiratory irritation.</li> <li>Hard statements</li> <li>Causes serest kin burns and eye damage.</li> <li>Hard statements</li> <li>Causes serest kin burns and eye damage.</li> <li>Hard statements</li> <li>Causes serest kin burns and eye damage.</li> <li>Hard statements</li> <li>Causes serest kin burns and eye damage.</li> <li>Hard statements</li> <li>Causes serest kin burns and eye damage.</li> <li>Hard statements</li> <li>Cause d</li></ul>		
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$\begin{array}{c} \text{Manufacturer/Supplie:}\\ \text{Aqua Solutions, Inc.}\\ \text{G913 Highway 225}\\ \text{DEER PARK, TX 77336}\\ \text{USA}\\ \text{800-236-2386}\\ \hline \textbf{Information department:}\\ \text{Technical Coordinator}\\ \text{Sherman Nelson shermann@aquasolutions.org}\\ \hline \textbf{Smregency telephone number:}\\ \text{Chemtree: 800-424-9300}\\ \hline \textbf{Canutee: 613-996-6666}\\ \hline \textbf{Canutee: 6145 label elements}\\ \hline \textbf{Correston 1B}\\ \hline \textbf{HS05}\\ \hline \textbf{GHS05}\\ \hline \textbf{GHS07}\\ \hline \textbf{Specific Target Organ Toxicity - Single Exposure 3 H335 May cause respiratory irritation.\\ \hline \textbf{Label elements}\\ \hline \textbf{Canutees 1}\\ \hline \textbf{Canutees 1}\\ \hline \textbf{Canutees 1}\\ \hline \textbf{Canute 1}\\ \hline Can$	• Article number: 0446	
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<ul> <li>Hazard statements <ul> <li>Causes severe skin burns and eye damage.</li> <li>May cause respiratory irritation.</li> </ul> </li> <li>Precautionary statements <ul> <li>Do not breathe dusts or mists.</li> <li>Wash thoroughly after handling.</li> <li>Use only outdoors or in a well-ventilated area.</li> </ul> </li> </ul>	<ul> <li>Label elements</li> <li>GHS label elements The product is classified</li> <li>Hazard pictograms</li> <li>GHS05 GHS07</li> <li>Signal word Danger</li> </ul>	and labeled according to the Globally Harmonized System (GHS).
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(Contd. of pag	ge 1)
Wear protective gloves/protective clothing/eye protection/face protection.	
If swallowed: Rinse mouth. Do NOT induce vomiting.	
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.	
<i>IF INHALED: Remove person to fresh air and keep comfortable for breathing.</i>	da
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to Continue ringing	<i>ao</i> .
Continue rinsing. Immediately call a poison center/doctor.	
Specific treatment (see on this label).	
Wash contaminated clothing before reuse.	
Store in a well-ventilated place. Keep container tightly closed.	
Store locked up.	
Dispose of contents/container in accordance with local/regional/national/international regulations.	
· Classification system:	
· NFPA ratings (scale 0 - 4)	
Health = 3	
Fire = $0$	
3  0  Reactivity = 0	
· HMIS-ratings (scale 0 - 4)	
HEALTH *3 $Health = *3$	
FIRE 0 $Fire = 0$	
<b>REACTIVITY</b> Reactivity = 0	
· Other hazards	
· Results of PBT and vPvB assessment	
• <b>PBT:</b> Not applicable.	
· <b>vPvB:</b> Not applicable.	
3 Composition/information on ingredients	
5 Composition/injormation on ingreatents	
· Chemical characterization: Mixtures	
• Description: Mixture of the substances listed below with nonhazardous additions.	

· Dangerous components:

CAS: 1336-21-6 Ammonium Hydroxide

• Table of Nonhazardous Ingredients

CAS: 7732-18-5 Water

## 4 First-aid measures

- $\cdot$  Description of first aid measures
- General information: Immediately remove any clothing soiled by the product.
- 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: 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.

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20.0%

80.0%

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• *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
- During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

### 6 Accidental release measures

• Personal precautions, protective equipment and emergency procedures	
Mount respiratory protective device. Wear protective equipment. Keep unprotected persons away.	
• Environmental precautions:	
Do not allow product to reach sewage system or any water course.	
Inform respective authorities in case of seepage into water course or sewage system.	
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:	
CAS: 1336-21-6 Ammonium Hydroxide	61 ppm
• PAC-2:	
CAS: 1336-21-6 Ammonium Hydroxide	330 ppm
· PAC-3:	i
CAS: 1336-21-6 Ammonium Hydroxide	2,300 ppm

# 7 Handling and storage

· Handling:

· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

• Information about protection against explosions and fires: Keep respiratory protective device available.

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- · 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:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

#### · 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.





Tightly sealed goggles

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· Body protection: Protective work clothing

Information on basic physical and c	hemical properties	
General Information	nemicui properties	
Appearance:		
Form:	Liquid	
Color:	Clear	
Odor:	Strong ammonia odor	
Odor threshold:	Not determined.	
<i>pH-value at 20 °C (68 °F):</i>	>12	
Change in condition	··· · · ·	
Melting point/Melting range:	Undetermined.	
Boiling point/Boiling range:	100 °C (212 °F)	
Flash point:	Not applicable.	
Flammability (solid, gaseous):	Not applicable.	
Decomposition temperature:	Not determined.	
Ignition temperature:	Product is not selfigniting.	
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Vapor pressure at 20 $^{\circ}C$ (68 $^{\circ}F$ ):	23 hPa (17.3 mm Hg)	
<i>Density at 20 °C (68 °F):</i>	0.97606 g/cm³ (8.14522 lbs/gal)	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water:	Fully miscible.	
Partition coefficient (n-octanol/wate	<b>r</b> ): Not determined.	
Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
Solvent content:		
Water:	80.0 %	
VOC content:	0.00 %	
	0.0 g/l / 0.00 lb/gal	
Solids content:	0.0 %	
Other information	No further relevant information available.	

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### **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.

#### **11 Toxicological information**

- · Information on toxicological effects
- Acute toxicity:

· LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)

Oral LD50 2,500 mg/kg

#### · 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:

The product shows the following dangers according to internally approved calculation methods for preparations: Corrosive

Irritant

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)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is 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 (Self-assessment): hazardous for water

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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.

Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

· 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.

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· UN-Number · DOT, IMDG, IATA	UN2672		
· UN proper shipping name			
$\cdot DOT$	Not regulated		
	Ammonia solution		
· IMDG, IATA	AMMONIA SOLUTION		
· Transport hazard class(es)			
·DOT			
CORROSVE 8			
Not applicable			
· Class	8 Corrosive substances		
· Label	8		
· IMDG, IATA			
· Class	8 Corrosive substances		
· Label	8		
· Packing group			
· DOT, IMDG, IATA	III		

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	(Contd. of page
Environmental hazards:	
Marine pollutant:	No
Special precautions for user	Warning: Corrosive substances
Hazard identification number (Kemler code):	80
EMS Number:	F-A,S-B
Segregation groups	(SGG18) Alkalis
Stowage Category	A
Stowage Code	SW2 Clear of living quarters.
5	SW5 If under deck, stow in a mechanically ventilated space.
Segregation Code	SG35 Stow "separated from" SGG1-acids
Transport in bulk according to Annex II of	
MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT	
Quantity limitations	On passenger aircraft/rail: 5 L
2	On cargo aircraft only: 60 L
IMDG	······
Limited quantities (LQ)	51.
Excepted quantities (EQ)	Code: E1
Excepted quantumes (EQ)	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
	1 11 1 0 0
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): None of the ingredients is listed. · Section 313 (Specific toxic chemical listings): CAS: 1336-21-6 Ammonium Hydroxide · TSCA (Toxic Substances Control Act): Water Ammonium Hydroxide · Hazardous Air Pollutants None of the ingredients is listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

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· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

### $\cdot$ Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

### · Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

### · TLV (Threshold Limit Value)

None of the ingredients is listed.

### · NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

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



· Signal word Danger

· Hazard-determining components of labeling: Ammonium Hydroxide · Hazard statements Causes severe skin burns and eye damage. May cause respiratory irritation. · Precautionary statements Do not breathe dusts or mists. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. 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. Store in a well-ventilated place. Keep container tightly closed. Store locked up. 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.

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	(Contd. of page 9)
· Contact:	
Date of Preparation / Last Revision:	
· Date of preparation / last revision	
Revision 1.2, 05-21-2024: updated DOT information. 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	
ELINCS: European List of Notified Chemical Substances	
CAS: Chemical Abstracts Service (division of the American Chemical Society)	
NFPA: National Fire Protection Association (USA)	
HMIS: Hazardous Materials Identification System (USA)	
VOC: Volatile Organic Compounds (USA, EU)	
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	
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	
$\cdot$ * Data compared to the previous version altered.	
· · Data comparea to the previous version allered.	
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