

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/11/2024

Reviewed on 06/11/2024

1 Identification

- **Product identifier**
- **Trade name:** Ferrous Ammonium Sulfate
0.05 Normal Certified
- **Article number:** 3838
- **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**



GHS08 Health hazard

Carcinogenicity 1A H350 May cause cancer.

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



GHS08

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**
Sulfuric Acid 96 - 98%
- **Hazard statements**
May cause cancer.
- **Precautionary statements**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.
IF exposed or concerned: Get medical advice/attention.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



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

HEALTH	0	Health = *0
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 7664-93-9	Sulfuric Acid 96 - 98%	3.587%
CAS: 7783-85-9	Ferrous Ammonium Sulfate	1.911%

- **Table of Nonhazardous Ingredients**

CAS: 7732-18-5	Water	94.502%
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4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult 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.

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6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **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).
 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: 7664-93-9	Sulfuric Acid 96 - 98%	0.20 mg/m ³
CAS: 7783-85-9	Ferrous Ammonium Sulfate	9.6 mg/m ³

- **PAC-2:**

CAS: 7664-93-9	Sulfuric Acid 96 - 98%	8.7 mg/m ³
CAS: 7783-85-9	Ferrous Ammonium Sulfate	110 mg/m ³

- **PAC-3:**

CAS: 7664-93-9	Sulfuric Acid 96 - 98%	160 mg/m ³
CAS: 7783-85-9	Ferrous Ammonium Sulfate	640 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
 Ensure good ventilation/exhaustion at the workplace.
 Open and handle receptacle with care.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **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 following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
 At this time, the remaining constituent has no known exposure limits.

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CAS: 7664-93-9 Sulfuric Acid 96 - 98%

PEL Long-term value: 1 mg/m³

REL Long-term value: 1 mg/m³

TLV Long-term value: 0.2* mg/m³
*as thoracic fraction, A2

· **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.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

· **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.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid

Color: Clear pale blue-green

· **Odor:** Odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

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· 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 °C (68 °F): 23 hPa (17.3 mm Hg)	
· Density at 20 °C (68 °F): 1.04665 g/cm ³ (8.73429 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/water): Not determined.	
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Water:	94.5 %
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal
 Solids content: 1.9 %	
· 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.

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11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** No irritating effect.

- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

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

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

CAS: 7664-93-9	Sulfuric Acid 96 - 98%	I
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- **NTP (National Toxicology Program)**

CAS: 7664-93-9	Sulfuric Acid 96 - 98%	K
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- **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 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **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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14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	<p style="text-align: right;">UN1760</p>
<ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG, IATA 	<p style="text-align: right;">Corrosive liquids, n.o.s. (Sulfuric Acid) CORROSIVE LIQUID, N.O.S. (Sulfuric Acid)</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<div style="text-align: right;">  <p>8</p> </div>
<ul style="list-style-type: none"> · Class · Label 	<p style="text-align: right;">8 Corrosive substances 8</p>
<ul style="list-style-type: none"> · IMDG, IATA 	<div style="text-align: right;">  <p>8</p> </div>
<ul style="list-style-type: none"> · Class · Label 	<p style="text-align: right;">8 Corrosive substances 8</p>
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	<p style="text-align: right;">II</p>
<ul style="list-style-type: none"> · Environmental hazards: 	<p style="text-align: right;">Not applicable.</p>
<ul style="list-style-type: none"> · Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Segregation Code 	<p style="text-align: right;">Warning: Corrosive substances 80 F-A,S-B (SGG1a) Strong acids B SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides</p>
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	<p style="text-align: right;">Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: · DOT · Quantity limitations 	<p style="text-align: right;">On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L</p>
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p style="text-align: right;">1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</p>

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· **UN "Model Regulation":** UN 1760 CORROSIVE LIQUID, N.O.S. (SULFURIC ACID), 8, II

15 Regulatory information

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

- **Section 355 (extremely hazardous substances):**

CAS: 7664-93-9	Sulfuric Acid 96 - 98%
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- **Section 313 (Specific toxic chemical listings):**

CAS: 7664-93-9	Sulfuric Acid 96 - 98%
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- **TSCA (Toxic Substances Control Act):**

Water	ACTIVE
Sulfuric Acid 96 - 98%	ACTIVE

- **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.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **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)**

CAS: 7664-93-9	Sulfuric Acid 96 - 98%	A2
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- **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**



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

Sulfuric Acid 96 - 98%

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- **Hazard statements**

May cause cancer.

- **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wear protective gloves/protective clothing/eye protection/face protection.

IF exposed or concerned: Get medical advice/attention.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- **National regulations:**

- **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.

Exceptions can be made by the authorities in certain cases.

- **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, 06/10/2024: Reviewed SDS for accuracy. MH/STN

06/11/2024 / 1.0

- **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)

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

Carcinogenicity 1A: Carcinogenicity – Category 1A

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