

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/26/2020

Reviewed on 10/26/2020

1 Identification

- **Product identifier**
- **Trade name:** Cadmium Sulfate 150.0 gpL
Prepared to ASTM D3227-16
- **Article number:** ERL065
- **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 sherman@aquasolutions.org
Technical Coordinator
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**
Chemtrec: 800-424-9300
Canutec: 613-996-6666



2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

Muta. 1B H340 May cause genetic defects.

Carc. 1A H350 May cause cancer.

Repr. 1B H360 May damage fertility or the unborn child.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

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



GHS06



GHS08

- **Signal word** Danger

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/26/2020

Reviewed on 10/26/2020

Trade name: Cadmium Sulfate 150.0 gpL
Prepared to ASTM D3227-16

(Contd. of page 1)

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

Cadmium Sulfate 8/3-Hydrate

Sulfuric Acid 96 - 98%

· **Hazard statements**

Harmful if swallowed.

Fatal if inhaled.

May cause genetic defects.

May cause cancer.

May damage fertility or the unborn child.

Causes damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

Obtain special instructions before use.

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

Do not breathe dust/fume/gas/mist/vapors/spray.

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.

[In case of inadequate ventilation] wear respiratory protection.

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Immediately call a poison center/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment is urgent (see on this label).

Get medical advice/attention if you feel unwell.

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

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 3

Fire = 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.

(Contd. on page 3)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/26/2020

Reviewed on 10/26/2020

Trade name: Cadmium Sulfate 150.0 gpL
Prepared to ASTM D3227-16

(Contd. of page 2)

· Dangerous components:		
CAS: 7790-84-3	Cadmium Sulfate 8/3-Hydrate	13.9866%
CAS: 7664-93-9	Sulfuric Acid 96 - 98%	0.286%
· Table of Nonhazardous Ingredients		
CAS: 7732-18-5	Water	85.727%

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.
 Remove breathing apparatus only after contaminated clothing have been completely removed.
 In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**
 Supply fresh air or oxygen; call for doctor.
 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.
- **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**
 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.
- **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 item 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.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/26/2020

Reviewed on 10/26/2020

Trade name: Cadmium Sulfate 150.0 gpL
Prepared to ASTM D3227-16

(Contd. of page 3)

· Protective Action Criteria for Chemicals

· PAC-1:

CAS: 7790-84-3	Cadmium Sulfate 8/3-Hydrate	0.1 mg/m ³
CAS: 7664-93-9	Sulfuric Acid 96 - 98%	0.20 mg/m ³

· PAC-2:

CAS: 7790-84-3	Cadmium Sulfate 8/3-Hydrate	0.76 mg/m ³
CAS: 7664-93-9	Sulfuric Acid 96 - 98%	8.7 mg/m ³

· PAC-3:

CAS: 7790-84-3	Cadmium Sulfate 8/3-Hydrate	11 mg/m ³
CAS: 7664-93-9	Sulfuric Acid 96 - 98%	160 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.

Prevent formation of aerosols.

· 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 item 7.

· Control parameters

· Components with limit values that require monitoring at the workplace:

CAS: 7790-84-3 Cadmium Sulfate 8/3-Hydrate

PEL Long-term value: 0.005 mg/m³
as Cd; see 29 CFR 1910.1027

REL See Pocket Guide App. A

TLV Long-term value: 0.01 0.002* mg/m³
as Cd; *respirable fraction; BEI

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

· Additional information: The lists that were valid during the creation were used as basis.

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/26/2020

Reviewed on 10/26/2020

Trade name: Cadmium Sulfate 150.0 gpL
Prepared to ASTM D3227-16

(Contd. of page 4)

- **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.

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

- **Odor:** Odorless

- **Odor threshold:** Not determined.

- **pH-value:** Not determined.

- **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 100 °C (212 °F)

- **Flash point:** Not applicable.

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/26/2020

Reviewed on 10/26/2020

Trade name: Cadmium Sulfate 150.0 g/L
Prepared to ASTM D3227-16

(Contd. of page 5)

· Flammability (solid, gaseous):	Not applicable.
· Decomposition temperature:	Not determined.
· Auto igniting:	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):	1.0725 g/cm ³ (8.95001 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:	85.7 %
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal
Solids content:	14.0 %
· 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.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

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

ATE (Acute Toxicity Estimate)

Oral	LD50	715 mg/kg
Inhalative	LC50/4h	0.357 mg/l

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/26/2020

Reviewed on 10/26/2020

Trade name: Cadmium Sulfate 150.0 gpL
Prepared to ASTM D3227-16

(Contd. of page 6)

CAS: 7790-84-3 Cadmium Sulfate 8/3-Hydrate

Oral	LD50	100 mg/kg (ATE)
Inhalative	LC50/4h	0.05 mg/l (ATE)

· 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:

Toxic

Harmful

Very toxic

The product can cause inheritable damage.

· Carcinogenic categories
· IARC (International Agency for Research on Cancer)

CAS: 7790-84-3	Cadmium Sulfate 8/3-Hydrate	I
CAS: 7664-93-9	Sulfuric Acid 96 - 98%	I

· NTP (National Toxicology Program)

CAS: 7790-84-3	Cadmium Sulfate 8/3-Hydrate	K
CAS: 7664-93-9	Sulfuric Acid 96 - 98%	K

· OSHA-Ca (Occupational Safety & Health Administration)

CAS: 7790-84-3	Cadmium Sulfate 8/3-Hydrate
----------------	-----------------------------

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 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely 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.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/26/2020

Reviewed on 10/26/2020

Trade name: Cadmium Sulfate 150.0 gpL
Prepared to ASTM D3227-16

(Contd. of page 7)

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· UN-Number	
· DOT, ADN, IMDG, IATA	Not regulated
· UN proper shipping name	
· DOT, ADN, IMDG, IATA	Not regulated
· Transport hazard class(es)	
· DOT, ADN, IMDG, IATA	
· Class	Not regulated
· Packing group	
· DOT, IMDG, IATA	Not regulated
· Environmental hazards:	
· Marine pollutant:	Yes
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	Not regulated

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%
· Section 313 (Specific toxic chemical listings):	
CAS: 7790-84-3	Cadmium Sulfate 8/3-Hydrate
CAS: 7664-93-9	Sulfuric Acid 96 - 98%
· TSCA (Toxic Substances Control Act):	
Water	ACTIVE
Sulfuric Acid 96 - 98%	ACTIVE
· Hazardous Air Pollutants	
CAS: 7790-84-3	Cadmium Sulfate 8/3-Hydrate
· Proposition 65	
· Chemicals known to cause cancer:	
CAS: 7790-84-3	Cadmium Sulfate 8/3-Hydrate
· Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/26/2020

Reviewed on 10/26/2020

Trade name: Cadmium Sulfate 150.0 gpL
Prepared to ASTM D3227-16

(Contd. of page 8)

· **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 established by ACGIH)**

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

A2

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

CAS: 7790-84-3 Cadmium Sulfate 8/3-Hydrate

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

· **Hazard pictograms**



GHS06 GHS08

· **Signal word** Danger

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

Cadmium Sulfate 8/3-Hydrate

Sulfuric Acid 96 - 98%

· **Hazard statements**

Harmful if swallowed.

Fatal if inhaled.

May cause genetic defects.

May cause cancer.

May damage fertility or the unborn child.

Causes damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

Obtain special instructions before use.

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

Do not breathe dust/fume/gas/mist/vapors/spray.

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.

[In case of inadequate ventilation] wear respiratory protection.

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Immediately call a poison center/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment is urgent (see on this label).

Get medical advice/attention if you feel unwell.

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.

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/26/2020

Reviewed on 10/26/2020

Trade name: Cadmium Sulfate 150.0 g/L
Prepared to ASTM D3227-16

(Contd. of page 9)

- **National regulations:**
- **Additional classification according to Decree on Hazardous Materials:**
Carcinogenic hazardous material group III (dangerous).
- **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**
Revision 0.5 updated DOT information. STN
Revision 0.1, 08/05/2019: Updated product description. STN
10/26/2020 / -
- **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 2: Acute toxicity – Category 2
Muta. 1B: Germ cell mutagenicity – Category 1B
Carc. 1A: Carcinogenicity – Category 1A
Repr. 1B: Reproductive toxicity – Category 1B
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

US