Safety Data Sheet
acc. to OSHA HCS

Printing date 11/20/2017 *Reviewed on 11/20/2017*

1 Identification

· **Product identifier**

· **Trade name: Cupric Nitrate**
50% w/v Solution

· **Article number:** GEN009A

· **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
· **Emergency telephone number:**
Chemtrec: 800-424-9300
Canutec: 613-996-6666

2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS03 Flame over circle

Ox. Liq. 2 H272 May intensify fire; oxidizer.

GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.

GHS07

Skin Irrit. 2 H315 Causes skin irritation.

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

GHS03 GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Cupric Nitrate Hydrate
· **Hazard statements**
May intensify fire; oxidizer.
Causes skin irritation.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/20/2017 Reviewed on 11/20/2017

Trade name: Cupric Nitrate
50% w/v Solution

(Contd. of page 1)

Causes serious eye damage.

· **Precautionary statements**
Keep away from heat.
Keep/Store away from clothing/combustible materials.
Take any precaution to avoid mixing with combustibles.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of water.
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).
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use for extinction: CO2, powder or water spray.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 3
Fire = 3
Reactivity = 0

The substance possesses oxidizing properties.

· **HMIS-ratings (scale 0 - 4)**

*Health = *3*
Fire = 0
Reactivity = 2

· **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: 19004-19-4	Cupric Nitrate Hydrate	38.85%

· **Table of Nonhazardous Ingredients**		
CAS: 7697-37-2	Nitric Acid	0.584%
CAS: 7732-18-5	Water	60.566%

4 First-aid measures

· **Description of first aid measures**
· **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.*

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/20/2017 Reviewed on 11/20/2017

Trade name: Cupric Nitrate
50% w/v Solution

(Contd. of page 2)

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

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 item 13.
· **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: 19004-19-4	Cupric Nitrate Hydrate	42 mg/m³
CAS: 7697-37-2	Nitric Acid	0.16 ppm

· **PAC-2:**		
CAS: 19004-19-4	Cupric Nitrate Hydrate	150 mg/m³
CAS: 7697-37-2	Nitric Acid	24 ppm

· **PAC-3:**		
CAS: 19004-19-4	Cupric Nitrate Hydrate	240 mg/m³
CAS: 7697-37-2	Nitric Acid	92 ppm

7 Handling and storage

· **Handling:**
· **Precautions for safe handling** No special precautions are necessary if used correctly.
· **Information about protection against explosions and fires:** No special measures required.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/20/2017 *Reviewed on 11/20/2017*

Trade name: Cupric Nitrate
50% w/v Solution

(Contd. of page 3)

· **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: 19004-19-4 Cupric Nitrate Hydrate	
NIOS	Short-term value: 1mg/m³ mg/m³

· **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 skin.
Avoid contact with the eyes and skin.
· **Breathing equipment:** Not required.
· **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

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/20/2017 Reviewed on 11/20/2017

Trade name: Cupric Nitrate
50% w/v Solution

(Contd. of page 4)

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Blue
· **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.
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	
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):**	1.287 g/cm³ (10.74002 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:	60.6 %
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gl
Solids content:	38.9 %
· **Other information**	No further relevant information available.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/20/2017 Reviewed on 11/20/2017

Trade name: Cupric Nitrate
50% w/v Solution

(Contd. of page 5)

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	2,044 mg/kg (rat)

CAS: 19004-19-4 Cupric Nitrate Hydrate		
Oral	LD50	794 mg/kg (rat)
Irritation of skin	Skin Corrosion/Irritation	(rabbit)
Irritation of eyes	Eye damage/eye irritation	(rabbit)

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** 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:
Irritant

· **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.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Cupric Nitrate
50% w/v Solution

(Contd. of page 6)

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

14 Transport information

· **UN-Number**	
· **DOT, IMDG, IATA**	UN3218
· **UN proper shipping name**	
· **DOT**	Nitrates, inorganic, aqueous solution, n.o.s. (copper dinitrate)
· **IMDG, IATA**	NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. (copper dinitrate)
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	5.1 Oxidizing substances
· **Label**	5.1
· **IMDG, IATA**	

· **Class**	5.1 Oxidizing substances
· **Label**	5.1
· **Packing group**	
· **DOT, IMDG, IATA**	III

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Cupric Nitrate
50% w/v Solution

(Contd. of page 7)

· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Oxidizing substances
· **Danger code (Kemler):**	50
· **EMS Number:**	F-A,S-Q
· **Stowage Category**	B
· **Segregation Code**	SG38 Stow "separated from" ammonium compounds. SG49 Stow "separated from" cyanides SG62 Stow "separated from" sulphur
· **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: 25 kg On cargo aircraft only: 100 kg
· **IMDG**	
· **Limited quantities (LQ)**	5 kg
· **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 3218 NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S., 5.1, III

15 Regulatory information

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

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

CAS: 7697-37-2	Nitric Acid

· **Section 313 (Specific toxic chemical listings):**

CAS: 7697-37-2	Nitric Acid

· **TSCA (Toxic Substances Control Act):**

Nitric Acid

Water

· **TSCA new (21st Century Act) (Substances not listed)**

CAS: 19004-19-4	Cupric Nitrate Hydrate

· **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.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/20/2017 Reviewed on 11/20/2017

Trade name: Cupric Nitrate
50% w/v Solution

(Contd. of page 8)

· **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)**
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**

GHS03 GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Cupric Nitrate Hydrate
· **Hazard statements**
May intensify fire; oxidizer.
Causes skin irritation.
Causes serious eye damage.
· **Precautionary statements**
Keep away from heat.
Keep/Store away from clothing/combustible materials.
Take any precaution to avoid mixing with combustibles.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of water.
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).
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use for extinction: CO2, powder or water spray.
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**
11-20-2017: review SDS for accuracy. STN

(Contd. on page 10)

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/20/2017 *Reviewed on 11/20/2017*

Trade name: Cupric Nitrate
50% w/v Solution

(Contd. of page 9)

Creation date for SDS 12-23-2014. STN
11/20/2017 / -

· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
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
Ox. Liq. 2: Oxidizing liquids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1