

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/11/2022

Reviewed on 02/11/2022

1 Identification

- **Product identifier**
- **Trade name:** Copper and Iron Std.
1.0 ppm w/w in Acetonitrile
- **Article number:** M-603
- **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**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Acute Tox. 4 H332 Harmful if inhaled.
Eye Irrit. 2A H319 Causes serious eye irritation.

- **Label elements**

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

- **Hazard pictograms**



GHS02



GHS07

- **Signal word** Danger

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

Acetonitrile, Reagent ACS Grade

- **Hazard statements**

Highly flammable liquid and vapor.
Harmful if swallowed, in contact with skin or if inhaled.
Causes serious eye irritation.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

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Trade name: Copper and Iron Std.
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(Contd. of page 1)

· **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 Keep container tightly closed.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting/equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Avoid breathing 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.
 If swallowed: Call a poison center/doctor if you feel unwell.
 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.
 Specific treatment (see on this label).
 Rinse mouth.
 Take off contaminated clothing and wash it before reuse.
 If eye irritation persists: Get medical advice/attention.
 In case of fire: Use CO₂, powder or water spray to extinguish.
 Store in a well-ventilated place. Keep cool.
 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: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 75-05-8	Acetonitrile, Reagent ACS Grade	99.8%
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· **Table of Nonhazardous Ingredients**

CAS: 7732-18-5	Water	0.189%
CAS: 7697-37-2	Nitric Acid	0.011%

(Contd. on page 3)

Safety Data Sheet

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Trade name: Copper and Iron Std.
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(Contd. of page 2)

CAS: 19004-19-4	Cupric Nitrate Hydrate	0.0004%
CAS: 7439-89-6	Iron Metal	0.0001%

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:**
 Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
 In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:**
 Rinse opened eye for several minutes under running water. If symptoms persist, 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:**
 CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

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).
 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.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

CAS: 75-05-8	Acetonitrile, Reagent ACS Grade	13 ppm
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(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

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Trade name: Copper and Iron Std.
1.0 ppm w/w in Acetonitrile

(Contd. of page 3)

CAS: 7697-37-2	Nitric Acid	0.16 ppm
CAS: 19004-19-4	Cupric Nitrate Hydrate	42 mg/m ³
CAS: 7439-89-6	Iron Metal	3.2 mg/m ³
· PAC-2:		
CAS: 75-05-8	Acetonitrile, Reagent ACS Grade	50 ppm
CAS: 7697-37-2	Nitric Acid	24 ppm
CAS: 19004-19-4	Cupric Nitrate Hydrate	150 mg/m ³
CAS: 7439-89-6	Iron Metal	35 mg/m ³
· PAC-3:		
CAS: 75-05-8	Acetonitrile, Reagent ACS Grade	150 ppm
CAS: 7697-37-2	Nitric Acid	92 ppm
CAS: 19004-19-4	Cupric Nitrate Hydrate	240 mg/m ³
CAS: 7439-89-6	Iron Metal	150 mg/m ³

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 ignition sources away - Do not smoke.
 Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
 Keep receptacle tightly sealed.
 Store in cool, dry conditions in well sealed receptacles.
- **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: 75-05-8 Acetonitrile, Reagent ACS Grade

PEL Long-term value: 70 mg/m³, 40 ppm

REL Long-term value: 34 mg/m³, 20 ppm

TLV Long-term value: 20 ppm
 Skin, A4

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

(Contd. on page 5)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/11/2022

Reviewed on 02/11/2022

Trade name: Copper and Iron Std.
1.0 ppm w/w in Acetonitrile

(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.
 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.
- **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:	Fluid
Color:	Colorless
Odor:	Aromatic
Odor threshold:	Not determined.

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

- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	36 °C (96.8 °F)

- **Flash point:** 5 °C (41 °F)

(Contd. on page 6)

Safety Data Sheet

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Reviewed on 02/11/2022

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(Contd. of page 5)

· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	525 °C (977 °F)
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
Lower:	4.4 Vol %
Upper:	16 Vol %
· Vapor pressure at 20 °C (68 °F):	97 hPa (72.8 mm Hg)
· Density at 20 °C (68 °F):	0.78269 g/cm ³ (6.53155 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 at 20 °C (68 °F):	0.39 mPas
Kinematic:	Not determined.
· Solvent content:	
Water:	0.2 %
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
Solids content:	0.0 %
· 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.

US
(Contd. on page 7)

Safety Data Sheet

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Trade name: Copper and Iron Std.
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(Contd. of page 6)

11 Toxicological information

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

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

ATE (Acute Toxicity Estimate)

Oral	LD50	501 mg/kg
Dermal	LD50	1,102 mg/kg
Inhalative	LC50/4h	11 mg/l

CAS: 75-05-8 Acetonitrile, Reagent ACS Grade

Oral	LD50	500 mg/kg (ATE)
Dermal	LD50	1,100 mg/kg (ATE)
Inhalative	LC50/4h	11 mg/l (ATE)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
 The product shows the following dangers according to internally approved calculation methods for preparations:
 Harmful
 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.
- **Additional ecological information:**
- **General notes:**
 Water hazard class 2 (Self-assessment): hazardous for water
 Do not allow product to reach ground water, water course or sewage system.
 Danger to drinking water if even small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

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Trade name: Copper and Iron Std.
1.0 ppm w/w in Acetonitrile



(Contd. of page 7)

· **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

- | | |
|--|---|
| <ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA | <p style="margin-left: 20px;">UN1993</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG, IATA | <p style="margin-left: 20px;">Flammable liquids, n.o.s. (acetonitrile)
 FLAMMABLE LIQUID, N.O.S. (acetonitrile)</p> |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | <div style="text-align: center; margin-bottom: 10px;">  </div> <p style="margin-left: 20px;">3 Flammable liquids</p> |
| <ul style="list-style-type: none"> · Class · Label | <p style="margin-left: 20px;">3
3</p> |
| <ul style="list-style-type: none"> · IMDG, IATA | |
| <ul style="list-style-type: none"> · Class · Label | <div style="text-align: center; margin-bottom: 10px;">  </div> <p style="margin-left: 20px;">3 Flammable liquids
3</p> |
| <ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA | <p style="margin-left: 20px;">II</p> |
| <ul style="list-style-type: none"> · Environmental hazards: | <p style="margin-left: 20px;">Not applicable.</p> |
| <ul style="list-style-type: none"> · Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Stowage Category | <p style="margin-left: 20px;">Warning: Flammable liquids
 33
 F-E,S-D
 B</p> |
| <ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | <p style="margin-left: 20px;">Not applicable.</p> |

(Contd. on page 9)

US

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(Contd. of page 8)

· Transport/Additional information:

· DOT

· Quantity limitations

On passenger aircraft/rail: 5 L

On cargo aircraft only: 60 L

· IMDG

· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

· UN "Model Regulation":

UN 1993 FLAMMABLE LIQUID, N.O.S. (ACETONITRILE), 3, II

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):

CAS: 7697-37-2 | Nitric Acid

· Section 313 (Specific toxic chemical listings):

CAS: 75-05-8 | Acetonitrile, Reagent ACS Grade

CAS: 7697-37-2 | Nitric Acid

· TSCA (Toxic Substances Control Act):

Acetonitrile, Reagent ACS Grade

ACTIVE

Water

ACTIVE

Nitric Acid

ACTIVE

Iron Metal

ACTIVE

· Hazardous Air Pollutants

CAS: 75-05-8 | Acetonitrile, Reagent ACS Grade

· 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)

CAS: 75-05-8 | Acetonitrile, Reagent ACS Grade

CBD, D

· TLV (Threshold Limit Value)

CAS: 75-05-8 | Acetonitrile, Reagent ACS Grade

A4

(Contd. on page 10)

Safety Data Sheet

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1.0 ppm w/w in Acetonitrile

(Contd. of page 9)

· **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**



GHS02 GHS07

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**
Acetonitrile, Reagent ACS Grade
- **Hazard statements**
Highly flammable liquid and vapor.
Harmful if swallowed, in contact with skin or if inhaled.
Causes serious eye irritation.
- **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing 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.
If swallowed: Call a poison center/doctor if you feel unwell.
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.
Specific treatment (see on this label).
Rinse mouth.
Take off contaminated clothing and wash it before reuse.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use CO2, powder or water spray to extinguish.
Store in a well-ventilated place. Keep cool.
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**
Revision 0.0 02-11-2022: Creation date for SDS. STN/JH

(Contd. on page 11)

Safety Data Sheet

acc. to OSHA HCS

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Trade name: Copper and Iron Std.
1.0 ppm w/w in Acetonitrile

(Contd. of page 10)

02/11/2022 / -

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**Flam. Liq. 2: Flammable liquids – Category 2**Acute Tox. 4: Acute toxicity – Category 4**Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A*

US