HI-VALLEY CHEMICAL
LABORATORY PRODUCTS
1134 W. 850 N. CENTERVILLE, UT 84014
(801) 295-9591 Fax (801) 295-9448
www.hvchemical.com

Copper Sulfate

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier:	Copper Sulfate
SDS Number:	R-079
Revision Date:	9/22/2017
CAS Number:	7758-98-7
Chemical Formula:	CuSO4
Supplier Details:	High Valley Products, Inc. 1134 West 850 North Centerville, Utah 84014
Emergency:	PERS: 800-633-8253
Phone:	801-295-9591
Email:	sales@hvchemical.com
Web:	www.hvchemical.com

2 HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS):

Health, Acute toxicity, 4 Oral
Health, Skin corrosion/irritation, 2
Health, Serious Eye Damage/Eye Irritation, 2 A
Environmental, Hazards to the aquatic environment - Acute, 1
Environmental, Hazards to the aquatic environment - Chronic, 1

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: WARNING

GHS Hazard Pictograms:

GHS Hazard Statements:

H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

GHS Precautionary Statements:

P264 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302+352 - IF ON SKIN: Wash with soap and water.
P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P321 - Specific treatment (see _ on this label).
P330 - Rinse mouth.
P332+313 - If skin irritation occurs: Get medical advice/attention.
P337+313 - Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P391 - Collect spillage.
P501 - Dispose of contents/container to _

3 COMPOSITION/INFORMATION OF INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
7758-98-7	100%	Cupric sulfate

4 FIRST AID MEASURES

Inhalation: If inhaled, remove to fresh air and call a physician for instructions. In case of difficulty breathing, use oxygen assistance. Get medical attenion if condition is critical.

Skin Contact: Wash with soap and water. Consult a physician.

Eye Contact: Immediately flush eyes with large amounts of water for at least 15 minutes, lifting eyelids occasionally to facilitate irrigation.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5 FIRE FIGHTING MEASURES

Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture
No data available

Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Further information
No data

6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
Wear respiratory protection. Avoid dust formation. Avoid breathing dust, vapours, mist or gas. Ensure adequate ventilation.

Environmental precautions:
Do not let product enter drains.

Methods and materials for containment and cleaning up:
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7 HANDLING AND STORAGE

Handling Precautions: Avoid contact with eyes, skin, or clothing. Avoid breathing dust.

Storage Requirements: Keep container tightly closed. Store in cool/dry area.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal Protective Equipment:

Cupric sulfate cas#:(7758-98-7) [100%]

Personal protective equipment

Eye/face protection: Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact: Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril (KCL 740 / Aldrich Z677272, Size M)

Splash contact: Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril (KCL 740 / Aldrich Z677272, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection: Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Cupric sulfate cas#:(7758-98-7) [100%]

Components with workplace control parameters

TWA	1 mg/m3	USA. NIOSH Recommended Exposure Limits

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Blue crystals
Odor:	No data available
Odor Threshold:	No data available
Solubility:	No data available
Spec Grav./Density:	3.603
Viscosity:	No data available
Boiling Point:	No data available
Freezing/Melting Pt.:	200 °C (392 °F) - dec.
Flash Point:	No data available
Partition Coefficient:	No data available
Vapor Pressure:	9.7 hPa (7.3 mmHg) at 25 °C (77 °F)
Vapor Density:	No data available
pH:	No data available
Evap. Rate:	No data available
Auto-Ignition Temp:	No data available
Decomp Temp:	No data available
UFL/LFL:	No data available

10 STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical Stability:	Stable under recommended storage conditions.
Conditions to Avoid:	No data available
Materials to Avoid:	Powdered metals, hydroxylamine, Magnesium, Strong reducing agents
Hazardous Decomposition:	Hazardous decomposition products formed under fire conditions. - Sulphur oxides, Borane/boron oxides, Copper oxides

11 TOXICOLOGICAL INFORMATION

Cupric sulfate cas#:(7758-98-7) [100%]

Information on toxicological effects

Acute toxicity:
LD50 Oral - rat - 482 mg/kg
Inhalation: no data available

Dermal: no data available

LD50 Intraperitoneal - rat - 20 mg/kg
LD50 Subcutaneous - rat - 43 mg/kg
LD50 Intravenous - rat - 48.9 mg/kg

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitisation: Germ cell mutagenicity:

rat Liver DNA damage
mouse

Carcinogenicity:
Carcinogenicity - Chicken - Parenteral:
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Endocrine:Tumors.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Reproductive toxicity - mouse - Intravenous:
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
no data available

Developmental Toxicity - mouse - Intravenous:
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Central nervous system.
Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Additional Information:

RTECS: GL8800000

Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilsons disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Stomach - Irregularities - Based on Human Evidence

12 ECOLOGICAL INFORMATION

Cupric sulfate cas#:(7758-98-7) [100%]

Information on ecological effects

Toxicity:
Toxicity to fish mortality LC50 - other fish - 1 - 2.5 mg/l - 96.0 h.
Toxicity to daphnia and Immobilization EC50 - Daphnia magna (Water flea) - 0.024 mg/l - 48 h.
other aquatic
invertebrates

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life.

13 DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations.

14 TRANSPORT INFORMATION

UN3077, Environmentally hazardous substances, solid, n.o.s., 9, PGIII, (Cupric Sulfate)

15 REGULATORY INFORMATION

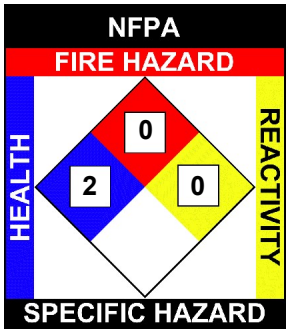
Component (CAS#) [%] - CODES

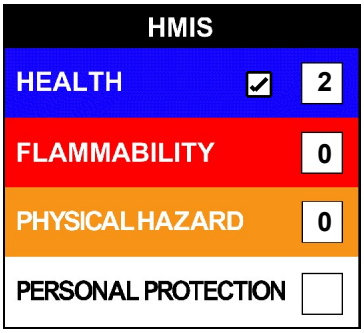
RQ(10LBS), Cupric sulfate (7758-98-7) [n/a%] CERCLA, CSWHS, EPCRAWPC, MASS, PA, TSCA

```
Regulatory CODE Descriptions
-----------------------------------------------------------------
RQ = Reportable Quantity
CERCLA = Superfund clean up substance
CSWHS = Clean Water Act Hazardous substances
EPCRAWPC = EPCRA Water Priority Chemicals
MASS = MA Massachusetts Hazardous Substances List
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
```

16 OTHER INFORMATION

NFPA: Health = 2, Fire = 0, Reactivity = 0, Specific Hazard = n/a
HMIS III: Health = 2(Chronic), Fire = 0, Physical Hazard = 0





Disclaimer:
Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).