

Safety Data Sheet

Copper Crystals

SECTION 1: Identification

1.1 Product identifier

Product name	Copper Crystals
Product number	CU15C
Brand	Caswell
Substance name	Copper II Sulfate, Pentahydrate

1.2 Other means of identification

Blue Powder or Crystals

1.3 Recommended use of the chemical and restrictions on use

Plating Copper onto objects.

1.4 Supplier's details

Name	Caswell Inc
Address	7696 Route 31 Lyons, NY 14489 USA
Telephone	315 946 1213
Fax	315 946 4456
email	sales@caswellplating.com

1.5 Emergency phone number(s)

Office Hours (9-4ET): 315 946 1213
24 Hour: CHEMTEL US# 1-800-255-3924 Intl# +01-813-248-0585

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

- Acute toxicity, oral (chapter 3.1), Cat. 3
- Hazardous to the aquatic environment - acute hazard (chapter 4.1), Cat. 1
- Hazardous to the aquatic environment - long-term hazard (chapter 4.1), Cat. 1

2.2 GHS label elements, including precautionary statements

Pictogram



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Signal word

Danger

Hazard statement(s)

H301

Toxic if swallowed

H400

Very toxic to aquatic life

H410

Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P264

Wash ... thoroughly after handling.

P270

Do not eat, drink or smoke when using this product.

P301+P310

IF SWALLOWED: Immediately call a POISON CENTER/doctor/...

P321

Specific treatment (see ... on this label).

P330

Rinse mouth.

P405

Store locked up.

P501

Dispose of contents/container to ...

P273

Avoid release to the environment.

P391

Collect spillage.

2.3 Other hazards which do not result in classification

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name

Copper II Sulfate, Pentahydrate

Hazardous components

1. COPPER SULFATE PENTAHYDRATE

Concentration

100 % (Volume)

Other names / synonyms

BLUE COPPER AS; BLUE VITRIOL; BLUESTONE; COPPER (2+) SULFATE PENTAHYDRATE; COPPER (II) SULFATE PENTAHYDRATE; COPPER (II) SULFATE PENTAHYDRATE (1:1:5); COPPER SULFATE; COPPER SULPHATE; COPPERFINE-ZINC; COPPERSULFATEPENTAHYDRATE; CSP; CUPRIC SULFATE PENTAHYDRATE; NATURAL CHALCANTHITE; ROMAN VITRIOL; SALZBURG VITRIOL; SULFURIC ACID, COPPER (2+) SALT (1:1), PENTAHYDRATE; SULFURIC ACID, COPPER (2+) SALT, PENTAHYDRATE; TRIANGLE

CAS no.

7758-99-8

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition:

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doctor/hospital. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

If inhaled	Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. Assure fresh air breathing. Allow the victim to rest.
In case of skin contact	Wash immediately with lots of water. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
In case of eye contact	Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
If swallowed	Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Immediately call a POISON CENTER or doctor/physician

4.2 Most important symptoms/effects, acute and delayed

Symptoms/injuries after inhalation: AFTER INHALATION OF DUST: Dry/sore throat. Coughing. ON HEATING: Metal fume fever.

Symptoms/injuries after skin contact: Tingling/irritation of the skin.

Symptoms/injuries after eye contact: Irritation of the eye tissue.

Symptoms/injuries after ingestion: Metal taste. Irritation of the oral mucous membranes. Nausea. Vomiting. Headache. Dizziness. Feeling of weakness. AFTER ABSORPTION OF HIGH QUANTITIES: Abdominal pain. Diarrhoea. Change in the haemogramme/blood composition. Change in urine composition. Disturbances of consciousness.

Chronic symptoms: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin. Itching. Skin rash/inflammation. Feeling of weakness. Loss of weight. Coughing. Possible inflammation of the respiratory tract. Risk of pneumonia. Enlargement/affection of the liver.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Adapt extinguishing media to the environment. Foam. Dry powder. Carbon dioxide. Water spray. Sand.

5.2 Specific hazards arising from the chemical

Reacts on exposure to water (moisture) with (some) metals. On burning: release of toxic and corrosive gases/vapours (sulphur oxides) and formation of metallic fumes. Reacts exothermically with (some) compounds: (increased) risk of fire. Reacts violently with (strong) reducers.

5.3 Special protective actions for fire-fighters

Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Further information

No unsuitable extinguishing media known. Do not use a heavy water stream.

SECTION 6: Accidental release measures

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6.1 Personal precautions, protective equipment and emergency procedures

Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit. Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes. In case of reactivity hazard: consider evacuation. Evacuate unnecessary personnel.

6.2 Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers

6.3 Methods and materials for containment and cleaning up

In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Avoid raising dust. Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in the original container in a cool, well ventilated place away from : incompatible materials. Keep container closed when not in use.

SECTION 8: Exposure controls/personal protection

8.2 Appropriate engineering controls

Avoid all unnecessary exposure.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Face shield. In case of dust production: protective goggles.

Skin protection

Gloves. Wear protective gloves.

Body protection

Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing.

Respiratory protection

Dust production: dust mask with filter type P2. Dust production: dust mask with filter type P3. Wear appropriate mask.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form	Blue Solid
Odor	None
Odor threshold	
pH	4

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Melting point/freezing point	
Initial boiling point and boiling range	
Flash point	
Evaporation rate	
Flammability (solid, gas)	
Upper/lower flammability limits	
Upper/lower explosive limits	
Vapor pressure	
Vapor density	
Relative density	2.3
Solubility(ies)	Soluble in water. Soluble in methanol. Soluble in glycerol. Water: 23 g/100ml Ethanol: 16 g/100ml (18 °C)
Partition coefficient: n-octanol/water	
Auto-ignition temperature	
Decomposition temperature	> 110 deg C
Viscosity	
Explosive properties	
Oxidizing properties	

Other safety information

Hygroscopic. Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1 Reactivity

Reacts on exposure to water (moisture) with (some) metals. On burning: release of toxic and corrosive gases/vapours (sulphur oxides) and formation of metallic fumes. Reacts exothermically with (some) compounds: (increased) risk of fire. Reacts violently with (strong) reducers.

10.2 Chemical stability

Hygroscopic. Not established.

10.4 Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5 Incompatible materials

Strong acids. Strong bases.

10.6 Hazardous decomposition products

fume. Sulfur compounds.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

LD50 oral rat 300 mg/kg (Rat)

LD50 dermal rabbit > 2000 mg/kg (Rabbit)

Skin corrosion/irritation

Not classified

Serious eye damage/irritation

Not classified

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Respiratory or skin sensitization

Not classified

Germ cell mutagenicity

Not classified

Carcinogenicity

Not classified

Reproductive toxicity

Not classified

STOT-single exposure

Toxic if swallowed.

SECTION 12: Ecological information

Toxicity

Ecology - general: Dangerous for the environment.

Ecology - air: TA-Luft Klasse 5.2.2/III.

Ecology - water: Water pollutant (surface water). Ground water pollutant. Maximum concentration in drinking water: 2.0 mg/l (copper) (Directive 98/83/EC); 250 mg/l (sulfate) (Directive 98/83/EC). Highly toxic to fishes. Very toxic to invertebrates (Daphnia). Highly toxic to algae. pH shift.

LC50 fishes 1: 1.5 mg/l (24 h; Lepomis macrochirus; TOXICITY TEST)

LC50 fish 2: 0.17 mg/l 24 h; Salmo gairdneri (Oncorhynchus mykiss)

TLM fish 1: 3.8 ppm (24 h; Salmo gairdneri (Oncorhynchus mykiss); Fresh water)

Persistence and degradability

Not established.

Bioaccumulative potential

Bioaccumable. Not established.

Other adverse effects

Toxic to flora.

SECTION 13: Disposal considerations

Disposal of the product

Remove waste in accordance with local and/or national regulations. Recycle/reuse. Do not discharge into the sewer. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.

Sewage disposal

Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

DOT (US)

Not dangerous goods

IMDG

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Not dangerous goods

IATA

Not dangerous goods

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Toxic Substances Control Act (TSCA) Inventory

Copper Sulfate

Massachusetts Right To Know Components

Copper Sulfate

New Jersey Right To Know Components

Copper Sulfate

Pennsylvania Right To Know Components

Copper Sulfate

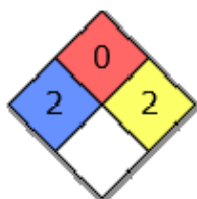
15.2 Chemical Safety Assessment

Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)

HMIS Rating

Copper II Sulfate, Pentahydrate	
HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	C

NFPA Rating



SECTION 16: Other information

16.1 Further information/disclaimer

DISCLAIMER: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of information for their particular purposes. In no event shall Caswell Inc be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, whatsoever arising, even if Caswell Inc has been advised of the possibility of such damages.