Safety Data Sheet
Copper Crystals

SECTION 1: Identification

1.1 Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>Copper Crystals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product number</td>
<td>CU15C</td>
</tr>
<tr>
<td>Brand</td>
<td>Caswell</td>
</tr>
<tr>
<td>Substance name</td>
<td>Copper II Sulfate, Pentahydrate</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Caswell Inc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>7696 Route 31</td>
</tr>
<tr>
<td></td>
<td>Lyons, NY 14489</td>
</tr>
<tr>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>Telephone</td>
<td>315 946 1213</td>
</tr>
<tr>
<td>Fax</td>
<td>315 946 4456</td>
</tr>
<tr>
<td>email</td>
<td><a href="mailto:sales@caswellplating.com">sales@caswellplating.com</a></td>
</tr>
</tbody>
</table>

1.5 Emergency phone number(s)

Office Hours (9-4ET): 315 946 1213
24 Hour: CHEMTEL US# 1-800-255-3924   Int# +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
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

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Copper II Sulfate, Pentahydrate</th>
</tr>
</thead>
</table>

Hazardous components

1. COPPER SULFATE PENTAHYDRATE

<table>
<thead>
<tr>
<th>Concentration</th>
<th>100 % (Volume)</th>
</tr>
</thead>
</table>

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


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If inhaled

Remove the victim into fresh air. Respiratory problems: consult a doctor/hospital. 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.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media


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
6.1 Personal precautions, protective equipment and emergency procedures

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

Respiratory protection

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance/form</td>
<td>Blue Solid</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor threshold</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>4</td>
</tr>
</tbody>
</table>
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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
Solubility(ies)

Partition coefficient: n-octanol/water
Auto-ignition temperature
Decomposition temperature
Viscosity
Explosive properties
Oxidizing properties

2.3
Soluble in water. Soluble in methanol. Soluble in glycerol. Water: 23 g/100ml Ethanol: 16 g/100ml (18 °C)

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.

- 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

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<tbody>
<tr>
<td>HEALTH</td>
</tr>
<tr>
<td>FLAMMABILITY</td>
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<tr>
<td>PHYSICAL HAZARD</td>
</tr>
<tr>
<td>PERSONAL PROTECTION</td>
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</table>

NFPA Rating

SECTION 16: Other information

16.1 Further information/disclaimer

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