Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Copper Sulphate Pentahydrate
Importer/Supplier: ATA Chem Ltd.
2506 Silica Pl., Coquitlam, BC
V3E 3K9
www.atachem.com
Phone Number: (604) 630-7866
Emergency Phone: North America: CHEM TEL (800) 255-3924
INTERNATIONAL: +01-813-248-0585
Date of Preparation: January 29, 2007

Section 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
WARNING
TOXIC BY INHALATION. TOXIC IN CONTACT WITH SKIN. TOXIC IF SWALLOWED. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION.

Potential Health Effects: See Section 11 for more information.
Likely Routes of Exposure: Skin contact, skin absorption, eye contact, inhalation, and ingestion.

Eye: May cause eye irritation.
Skin: Toxic in contact with skin. May cause skin irritation. May cause sensitisation by skin contact.
Inhalation: Toxic by inhalation. May cause respiratory tract irritation.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Signs and Symptoms: Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Abdominal pain. Burning sensation. Shock or collapse. Death.

Medical Conditions Aggravated By Exposure: Asthma. Allergies.
Target Organs: Skin, eyes, gastrointestinal tract and respiratory system.
Potential Environmental Effects: May cause long-term adverse effects in the aquatic environment See Section 12 for more information.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>Wt. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (II) sulfate pentahydrate</td>
<td>7758-99-8</td>
<td>97 - 100</td>
</tr>
</tbody>
</table>

Section 4: FIRST AID MEASURES

Eye Contact: In case of contact, immediately flush eyes with plenty of water. If easy to do, remove contact lenses, if worn.
Skin Contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion: CONSULT PHYSICIAN IMMEDIATELY. If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or MSDS where possible).

Note to Physicians: Symptoms may not appear immediately.

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Section 5: FIRE FIGHTING MEASURES

Flammability: Not flammable by WHMIS criteria.

Means of Extinction:

Suitable Extinguishing Media: Treat for surrounding material.

Unsuitable Extinguishing Media: Not available.


Explosion Data:

Sensitivity to Mechanical Impact: Not available.

Sensitivity to Static Discharge: Not available.

Protection of Firefighters: Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

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Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental Precautions: This material is a water pollutant. Keep out of drains, sewers, ditches, and waterways. Minimize use of water to prevent environmental contamination.

Methods for Containment: Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for Clean-Up: Vacuum or sweep material and place in a disposal container. Allow gas to dissipate harmlessly into the atmosphere.

Other Information: Not available.

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Section 7: HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes. Do not swallow. Do not breathe gas/fumes/vapor/spray. Handle and open container with care. When using do not eat or drink. Wash hands before eating, drinking, or smoking.
Storage:
Keep out of the reach of children. Keep container tightly closed. Keep away from food, drink and animal feedingstuffs.

### Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines**

**Exposure Limits**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>ACGIH-TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (II) sulfate pentahydrate</td>
<td>1 mg/m³ (mist); 0.1 mg/m³ (fume)</td>
</tr>
</tbody>
</table>

**Engineering Controls:** Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

**Personal Protective Equipment:**

- **Eye/Face Protection:** Wear eye/face protection.
- **Hand Protection:** Wear suitable gloves.
- **Skin and Body Protection:** Wear suitable protective clothing.
- **Respiratory Protection:** In case of insufficient ventilation, wear suitable respiratory equipment.

**General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices.

### Section 9: PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Crystals.

**Color:** Blue.

**Odour:** Odourless.

**Odour Threshold:** Not available.

**Physical State:** Solid.

**pH:** 4

**Viscosity:** Not available.

**Freezing Point:** Not available.

**Boiling Point:** ~ 150 °C (~ 302 °F)

**Flash Point:** Not applicable.

**Evaporation Rate:** Not available.

**Lower Flammability Limit:** Not available.

**Upper Flammability Limit:** Not available.

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Specific Gravity:** 1.26

**Solubility in Water:** Complete.

**Coefficient of Water/Oil Distribution:** Not available.
Auto-ignition Temperature: Not available.
Percent Volatile, wt. %: Not available.
VOC content, wt. %: Not available.

Section 10: STABILITY AND REACTIVITY

**Stability:** Stable under normal storage conditions.

**Conditions of Reactivity:** Heat. Incompatible materials.


**Hazardous Decomposition Products:** Oxides of sulphur. Oxides of copper.

**Possibility of Hazardous Reactions:** No dangerous reaction known under conditions of normal use.

Section 11: TOXICOLOGY INFORMATION

**EFFECTS OF ACUTE EXPOSURE**

**Component Analysis**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>LD$_{50}$ (oral)</th>
<th>LC$_{50}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (II) sulfate pentahydrate</td>
<td>300 mg/kg, rat</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Eye:** May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

**Skin:** Toxic in contact with skin. May cause skin irritation. May cause sensitisation by skin contact. Symptoms may include redness, edema, drying, defatting and cracking of the skin.

**Ingestion:** Toxic if swallowed. Abdominal pain. Burning sensation. Shock or collapse. Death.

**Inhalation:** Toxic by inhalation. May cause respiratory tract irritation.

**EFFECTS OF CHRONIC EXPOSURE**

**Target Organs:** Not available.

**Chronic Effects:** Not hazardous by WHMIS criteria.

**Carcinogenicity:** Not hazardous by WHMIS criteria.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Chemical Listed as Carcinogen or Potential Carcinogen *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (II) sulfate pentahydrate</td>
<td>Not listed.</td>
</tr>
</tbody>
</table>

* See Section 15 for more information.

**Mutagenicity:** Not hazardous by WHMIS criteria.

**Reproductive Effects:** Not hazardous by WHMIS criteria.

**Developmental Effects:**

- **Teratogenicity:** Not hazardous by WHMIS criteria.
- **Embryotoxicity:** Not hazardous by WHMIS criteria.
Respiratory Sensitization: Not hazardous by WHMIS criteria.

Skin Sensitization: Hazardous by WHMIS criteria.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Toxic to aquatic organisms.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions:
This material and its container must be disposed of in a safe way.

Section 14: TRANSPORTATION INFORMATION

TDG Classification
Environmentally Hazardous Substance, Solid, n.o.s. (Cupric Sulphate); Class 9; UN3077; PGIII

Section 15: REGULATORY INFORMATION

Federal Regulations
Canadian: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Global Inventories

Ingredient  Canada
Copper (II) sulfate pentahydrate  DSL/NDSL

HMIS - Hazardous Materials Identification System

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

NFPA - National Fire Protection Association:

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

WHMIS Classification(s):
Class D1B - Toxic Material
Class D2B - Skin Sensitization
Class D2B - Skin/Eye Irritant

WHMIS Hazard Symbols:
MATERIAL SAFETY DATA SHEET
Copper Sulphate Pentahydrate

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:
OSHA (O)  Occupational Safety and Health Administration.
ACGIH (G)  American Conference of Governmental Industrial Hygienists.
   A1 - Confirmed human carcinogen.
   A2 - Suspected human carcinogen.
   A3 - Animal carcinogen.
   A4 - Not classifiable as a human carcinogen.
   A5 - Not suspected as a human carcinogen.
IARC (I)  International Agency for Research on Cancer.
   1 - The agent (mixture) is carcinogenic to humans.
   2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.
   2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
   3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.
   4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.
NTP (N)   National Toxicology Program.
   1 - Known to be carcinogens.
   2 - Reasonably anticipated to be carcinogens.

Section 16: OTHER INFORMATION

Disclaimer:
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Version #:  1.0

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