SAFETY DATA SHEET

Cupric Sulfate Pentahydrate

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

GHS Product Information
Product Name: Cupric Sulfate Pentahydrate
Business Unit: Prince Agri
Other means of identification: Not available
Safety data sheet number: 5412-500 -US-E

Recommended use of the chemical and restrictions on use
Recommended use: No information available.
Uses advised against: No information available

Details of the supplier of the safety data sheet
Supplier: Prince Agri Products, Inc
229 Radio Road
Quincy, IL 62305
Tel: 217-222-8854
Fax: 217-222-5098
Toll Free: 800-677-4623
Email: prince@princeagri.com

Manufacturer: Prince Agri Products, Inc
229 Radio Road
Quincy, IL 62305
Tel: 217-222-8854
Fax: 217-222-5098
Toll Free: 800-677-4623
Email: prince@princeagri.com

SDS Contact (email of responsible person): prince@princeagri.com
24 Hour Emergency Phone Number: Chemtrec 1-800-424-9300 (CCN17224)
International: +1 703-527-3887

2. HAZARDS IDENTIFICATION

Classification
OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2A</td>
</tr>
</tbody>
</table>

Label elements

Emergency Overview
Cupric Sulfate Pentahydrate

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Revision Date 03/24/2015

**Warning**

**Hazard statements**
Harmful if swallowed
Causes skin irritation
Causes serious eye irritation

**Appearance** crystalline  
**Physical state** Solid  
**Odor** Odorless

**Precautionary Statements - Prevention**
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response**
Specific treatment
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

**Precautionary Statements - Disposal**
Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

**Other Information**

**Other hazards**
* May be harmful in contact with skin
* Very toxic to aquatic life with long lasting effects
* Very toxic to aquatic life

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Pure substance/mixture</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>CAS No</td>
</tr>
<tr>
<td>Copper (II) sulfate pentahydrate (1:1:5)</td>
<td>7758-99-8</td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) of composition has been withheld as a trade secret.

### 4. FIRST AID MEASURES

**First aid measures**
General advice: Call 911 or emergency medical service. Remove and isolate contaminated clothing and shoes.

Eye contact: In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Inhalation: Move victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Administer oxygen if breathing is difficult.

Skin Contact: Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Ingestion: Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do NOT induce vomiting.

Self-protection of the first aider: Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Symptoms: No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Dry chemical, CO₂, water spray or regular foam. Water spray, fog or regular foam. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal.

Unsuitable extinguishing media: Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical: Some may burn but none ignite readily. Those substances designated with a "P" may polymerize explosively when heated or involved in a fire. Some may be transported hot.

Explosion data

Sensitivity to Mechanical Impact: None.

Sensitivity to Static Discharge: None.

Protective equipment and precautions for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Do not touch or walk through spilled material. Stop leak if you can do it without risk.

For emergency responders: Use personal protection recommended in Section 8. Use personal protective equipment as required.

Environmental precautions: Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up
Methods for containment: Prevent dust cloud.

Methods for cleaning up: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area. Take up with sand or other non-combustible absorbent material and place into containers for later disposal. Cover liquid spill with sand, earth or other non-combustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Incompatible materials: None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (II) sulfate pentahydrate (1:1:5)</td>
<td>7758-99-8</td>
<td>TWA: 1 mg/m³ Cu dust and mist</td>
<td>-</td>
<td>IDLH: 100 mg/m³ Cu dust and mist TWA: 1 mg/m³ Cu dust and mist</td>
</tr>
</tbody>
</table>

NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls: Showers Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

General Hygiene Considerations: Handle in accordance with good industrial hygiene and safety practice.

Eye/face protection: Tight sealing safety goggles.

Skin and body protection: No special technical protective measures are necessary.

Respiratory protection: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Cupric Sulfate Pentahydrate

Revision Date 03/24/2015

Physical state
Appearance
Color

Solid
crystalline
blue

Odor
Odor threshold
Odorless

No information available

Explosive properties
Oxidizing properties

No information available
No information available

Softening point
Molecular weight
VOC Content (%)
Density
Bulk density
Percent Volatile

No information available
No information available
No information available
No information available
No information available
No information available

Other Information

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Extremes of temperature and direct sunlight.

Incompatible materials
None known based on information supplied.

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION
Information on likely routes of exposure

**Product Information:** No data available

- **Inhalation:** No data available.
- **Eye contact:** No data available.
- **Skin Contact:** No data available.
- **Ingestion:** No data available.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (II) sulfate pentahydrate (1:1:5)</td>
<td>7758-99-8</td>
<td>= 300 mg/kg (Rat)</td>
<td>&gt; 2 g/kg (Rat)</td>
<td>-</td>
</tr>
</tbody>
</table>

Information on toxicological effects

**Symptoms:** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

- **Sensitization:** No information available.
- **Germ cell mutagenicity:** No information available.
- **Carcinogenicity:** No information available.
- **Reproductive toxicity:** No information available.
- **STOT - single exposure:** No information available.
- **STOT - repeated exposure:** No information available.
- **Chronic toxicity:** May cause adverse liver effects.
- **Target Organ Effects:** Eyes, kidney, liver, Respiratory system, Skin.
- **Aspiration hazard:** No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document . mg/kg 300

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (II) sulfate pentahydrate (1:1:5)</td>
<td>7758-99-8</td>
<td>-</td>
<td>0.66 - 1.15: 96 h Lepomis macrochirus mg/L LC50 semi-static 0.1478 - 0.165: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.09 - 0.19: 96 h Oncorhynchus mykiss mg/L LC50 static 0.96 - 1.8: 96 h Lepomis macrochirus mg/L LC50 static 0.6752: 96 h Pimephales promelas mg/L LC50 static</td>
<td>0.147 - 0.227: 48 h Daphnia magna mg/L EC50 Static</td>
</tr>
</tbody>
</table>

**Persistence and degradability**

No information available.
Bioaccumulation
No information available.

Mobility
No information available.

Other adverse effects:
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes: Refer to all federal, state and local regulations prior to disposal of container and unused contents by reuse, recycle or disposal. Disposal should be in accordance with applicable regional, national and local laws and regulations. Avoid runoff to waterways and sewers. Recover or recycle if possible. Send to a licensed recycler, reclaimer or incinerator.

Disposal methods: Do not reuse container.

14. TRANSPORT INFORMATION

Note: Store in a closed container. Keep container upright.

DOT

UN/ID no UN3077
Proper shipping name Environmentally hazardous substance, solid, n.o.s.* (Copper Sulfate Pentahydrate)
Hazard Class 9
Packing Group III
Special Provisions 146, 335, A112, B54, B120, IB8, IP3, N20, T1, TP33, 8
Description UN3077, Environmentally hazardous substance, solid, n.o.s.*, 9, III
Emergency Response Guide Number 171

IATA

UN/ID no UN3077
Proper shipping name Environmentally hazardous substance, solid, n.o.s.*
Hazard Class 9
Packing Group III
ERG Code 9L
Special Provisions A158, A179, A97
Description UN3077, Environmentally hazardous substance, solid, n.o.s.*, 9, III

IMDG

UN/ID no UN3077
Proper shipping name Environmentally hazardous substance, solid, n.o.s.*
Hazard Class 9
Packing Group III
EmS-No F-A, S-F
Special Provisions 274, 335, 966, 967
Description UN3077, Environmentally hazardous substance, solid, n.o.s.*, 9, III

TDG

UN/ID no UN3077
Proper shipping name Environmentally hazardous substance, solid, n.o.s.*
Hazard Class 9
Packing Group III
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Cupric Sulfate Pentahydrate

Revision Date 03/24/2015

Description
UN3077, Environmentally hazardous substance, solid, n.o.s.*, 9, III,

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>Complies</td>
</tr>
<tr>
<td>DSL/NDSL</td>
<td>Not Determined</td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td>Not Determined</td>
</tr>
<tr>
<td>ENCS</td>
<td>Not Determined</td>
</tr>
<tr>
<td>IECSC</td>
<td>Complies</td>
</tr>
<tr>
<td>KECL</td>
<td>Not Determined</td>
</tr>
<tr>
<td>PICCS</td>
<td>Complies</td>
</tr>
<tr>
<td>AICS</td>
<td>Complies</td>
</tr>
</tbody>
</table>

Legend:

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
- ENCS - Japan Existing and New Chemical Substances
- IECSC - China Inventory of Existing Chemical Substances
- KECL - Korean Existing and Evaluated Chemical Substances
- PICCS - Philippines Inventory of Chemicals and Chemical Substances
- AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (II) sulfate pentahydrate (1:1:5)</td>
<td>7758-99-8</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories

- Acute health hazard: Yes
- Chronic Health Hazard: No
- Fire hazard: No
- Sudden release of pressure hazard: No
- Reactive Hazard: No

CWA (Clean Water Act)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (II) sulfate pentahydrate (1:1:5)</td>
<td>7758-99-8</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Cupric Sulfate Pentahydrate

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U.S. State Right-to-Know Regulations

No information available

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (II) sulfate pentahydrate (1:1:5)</td>
<td>7758-99-8</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

Canada

No information available

WHMIS Hazard Class Non-controlled

16. OTHER INFORMATION

NFPA
- Health hazards  2
- Flammability  0
- Instability  0
- Physical & Chemical Properties  0
- Personal protection  E

HMIS
- Health hazards  *2
- Flammability  0
- Physical hazards  0

Document Review
- Revision Number: 2
- Revision Note: No information available

Key or legend to abbreviations and acronyms used in the safety data sheet:
- Bioconcentration factor (BCF)
- International Air Transport Association (IATA)
- Globally Harmonized System (GHS)
- International Maritime Dangerous Goods (IMDG)

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End of Safety Data Sheet