

## SAFETY DATA SHEET

Preparation Date: 03/11/2015

Revision Date: 1/28/2016

Revision Number: G2

### 1. IDENTIFICATION

**Product identifier**

**Product code:** C1431  
**Product Name:** COPPER SULFATE, PENTAHYDRATE, GRANULAR, FCC

**Other means of identification**

**Synonyms:** Blue vitriol; Copper (II) Sulfate Pentahydrate  
**CAS #:** 7758-99-8  
**RTECS #** GL8900000  
**CI#:** Not available

**Recommended use of the chemical and restrictions on use**

**Recommended use:** No information available.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemical Mfg. Corp  
 14422 South San Pedro St.  
 Gardena, CA 90248  
 (310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>

**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Martin LaBenz (West Coast)  
**Contact Person:** Ibad Tirmiz (East Coast)

### 2. HAZARDS IDENTIFICATION

**Classification**

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

|                                   |             |
|-----------------------------------|-------------|
| Acute toxicity - Oral             | Category 3  |
| Skin corrosion/irritation         | Category 2  |
| Serious eye damage/eye irritation | Category 2A |

**Label elements**

## Danger

### Hazard statements

Toxic if swallowed  
Causes skin irritation  
Causes serious eye irritation



### Hazards not otherwise classified (HNOC)

Not Applicable

### Other hazards

Very toxic to aquatic life with long lasting effects  
Very toxic to aquatic life

### 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  
Wear eye/face protection

### Precautionary Statements - Response

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

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

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: Immediately call a POISON CENTER or doctor/physician

Rinse mouth

### Precautionary Statements - Storage

Store locked up

### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Components                                | CAS-No.   | Weight % |
|---|-----------|----------|
| Copper Sulfate, Pentahydrate<br>7758-99-8 | 7758-99-8 | 100      |

## 4. FIRST AID MEASURES

### First aid measures

#### **General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

#### **Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

#### **Eye Contact:**

Flush eyes with water for 15 minutes. Get medical attention.

#### **Inhalation:**

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

#### **Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Toxic if swallowed.

### Most important symptoms and effects, both acute and delayed

#### **Symptoms**

Causes eye irritation. Causes skin irritation. May cause a greenish discoloration of the skin. May cause discoloration of the cornea. May cause ulceration of the cornea. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea. Oral mucosa, vomitus, stools, and saliva may be stained blue or green following ingestion. May cause metallic taste. Abdominal pain. May cause metabolic acidosis. May cause methemoglobinemia. May affect the liver. Jaundice. It may affect the kidneys. May cause central nervous system effects. May affect the cardiovascular system. Hypotension. Perforation of the nasal septum if inhaled in excessive quantities. Irritating to respiratory system. Coughing and wheezing.

### Indication of any immediate medical attention and special treatment needed

#### **Notes to Physician:**

Treat symptomatically

### Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

## 5. FIRE-FIGHTING MEASURES

### Extinguishing Media

#### **Suitable Extinguishing Media:**

The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

#### **Unsuitable Extinguishing Media:**

No information available.

### Specific hazards arising from the chemical

#### **Hazardous Combustion Products:**

If involved in a fire, the following may be released: copper oxides, sulfur oxides

#### **Specific hazards:**

No information available.

### Special Protective Actions for Firefighters

#### **Specific Methods:**

No information available.

#### **Special Protective Equipment 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:** Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

### Methods and material for containment and cleaning up

**Methods for containment** Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

**Methods for cleaning up** Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

#### **Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

#### **Safe Handling Advice**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

### Conditions for safe storage, including any incompatibilities

#### **Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

#### **Incompatible Materials:**

Hydroxylamine. Acetylene. Hydrazine. Nitromethane. Strong reducing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### **National occupational exposure limits**

##### **United States**

| Components                                | OSHA | NIOSH                           | ACGIH                           | AIHA WHEEL |
|---|------|---------------------------------|---------------------------------|------------|
| Copper Sulfate, Pentahydrate<br>7758-99-8 | None | 1 mg/m <sup>3</sup> TWA (as Cu) | 1 mg/m <sup>3</sup> TWA (as Cu) | None       |

##### **Canada**

| Components                                | Alberta | British Columbia | Ontario | Quebec |
|---|---------|------------------|---------|--------|
| Copper Sulfate, Pentahydrate<br>7758-99-8 | None    | None             | None    | None   |

##### **Australia and Mexico**

| Components                                | Australia | Mexico |
|---|-----------|--------|
| Copper Sulfate, Pentahydrate<br>7758-99-8 | None      | None   |

## Appropriate engineering controls

### **Engineering measures to reduce exposure:**

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

## Individual protection measures, such as personal protective equipment

### **Personal Protective Equipment**

**Eye protection:** Goggles. or. Safety glasses with side-shields.

**Skin and body protection:** Chemical resistant apron. Long sleeved clothing. Gloves.

**Respiratory protection:** Effective dust mask. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent. .

**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|   |  |   |
|---|--|---|
| <b>Physical state:</b><br>Solid.                                | <b>Appearance:</b><br>Crystals. Granular. Powder.              | <b>Color:</b><br>Light blue.  |
| <b>Odor:</b><br>Odorless.                                       | <b>Taste</b><br>Nauseating. Metallic.                          | <b>Formula:</b><br>CuSO <sub>4</sub> •5H <sub>2</sub> O   |
| <b>Molecular/Formula weight:</b><br>249.69                      | <b>Flammability:</b><br>No information available               | <b>Flash point (°C):</b><br>No data available   |
| <b>Flashpoint (°C/°F):</b><br>No information available.         | <b>Flash Point Tested according to:</b><br>Not available       | <b>Autoignition Temperature (°C/°F):</b><br>No information available  |
| <b>Lower Explosion Limit (%):</b><br>No information available   | <b>Upper Explosion Limit (%):</b><br>No information available  | <b>pH:</b><br>No information available  |
| <b>Melting point/range(°C/°F):</b><br>110°C/230°F               | <b>Boiling point/range(°C/°F):</b><br>150°C/302°F              | <b>Decomposition temperature(°C/°F):</b><br>No information available  |
| <b>Bulk density:</b><br>No information available                | <b>Density (g/cm<sup>3</sup>):</b><br>No information available | <b>Specific gravity:</b><br>2.28 @ 15.6°C   |
| <b>Vapor pressure @ 20°C (kPa):</b><br>No information available | <b>Evaporation rate:</b><br>No information available           | <b>Vapor density:</b><br>No information available   |
| <b>VOC content (g/L):</b><br>No information available           | <b>Odor threshold (ppm):</b><br>No information available       | <b>Partition coefficient (n-octanol/water):</b><br>No information available   |
| <b>Viscosity:</b><br>No information available                   | <b>Miscibility:</b><br>No information available                | <b>Solubility:</b><br>Easily soluble in hot water<br>Soluble in cold water<br>Soluble in Methanol<br>Insoluble in Ethanol<br>It readily forms alkaline complexes at sufficiently high concentrations of amines or alkali cyanides<br>Practically insoluble in most organic solvents |

## 10. STABILITY AND REACTIVITY

### Reactivity

Anhydrous copper sulfate causes hydroxylamine to ignite and the hydrated salt is vigorously reduced  
Copper salts and nitromethane spontaneously form explosive materials  
Copper salts promote the decomposition of hydrazine  
Dangerous acetylides may be formed from many copper salts. The copper acetylides formed in ammonical or caustic solutions with Cu(II) salts and acetylene are more explosive than those derived from cuprous Cu(I) salts

### Chemical stability

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

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Incompatible materials.

**Incompatible Materials:** Hydroxylamine. Acetylene. Hydrazine. Nitromethane. Strong reducing agents.

**Hazardous decomposition products:** When heated to decomposition it emits toxic fumes. Sulfur oxides.

**Other Information**

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Principal Routes of Exposure:**

Ingestion. Inhalation.

**Acute Toxicity**

**Component Information**

*Copper Sulfate, Pentahydrate - 7758-99-8*

**LD50/oral/rat** = 960 mg/kg Oral LD50 Rat (LOLI)  
300 mg/kg (RTECS)

**LD50/oral/mouse** = 43 mg/kg Oral LD50 Mouse

**LD50/dermal/rat** = >2000 mg/kg

**LD50/dermal/rabbit** = No information available

**LC50/inhalation/rat** = No information available

**LC50/inhalation/mouse** = No information available

**Other LD50 or LC50 information** = Lowest Lethal Dose (LDL) for human: 1088 mg/kg

**Product Information**

**LD50/oral/rat =**

**VALUE- Acute Tox Oral** = 300mg/kg

**LD50/oral/mouse =**

**Value - Acute Tox Oral** = 43mg/kg

**LD50/dermal/rabbit**

**VALUE-Acute Tox Dermal** = No information available

**LD50/dermal/rat**

**VALUE -Acute Tox Dermal** = > 2000mg/kg

**LC50/inhalation/rat**

**VALUE-Vapor** = No information available

**VALUE-Gas** = No information available

**VALUE-Dust/Mist** = No information available

**LC50/Inhalation/mouse**

**VALUE-Vapor** = No information available

**VALUE - Gas** = No information available

**VALUE - Dust/Mist** = No information available

**Symptoms**

**Skin Contact:**

Causes skin irritation. May cause skin burns, itching allergic dermatitis, eczema, and greenish discoloration of the skin and hair.

**Eye Contact:** Causes serious eye irritation. May cause burns. May cause conjunctivitis. May cause corneal opacity. May cause corneal discoloration, ulceration.

**Inhalation** Causes respiratory tract (nose, throat, lung) irritation with coughing and wheezing. May cause ulceration and perforation of the nasal septum if inhaled in excessive quantities. Burning copper sulfate may result in irritating and poisonous gases which may irritate the respiratory tract and lungs, and may cause fume metal fever which is characterized by flu-like symptoms such as fever, chills, muscle aches.

**Ingestion** Toxic if swallowed. May cause gastrointestinal tract irritation with nausea, vomiting, hypermotility, diarrhea, metallic taste, burning sensation in the stomach or epigastrium, abdominal pain, and possible gastrointestinal tract bleeding. May affect metabolism (metabolic acidosis, anorexia, weight loss), liver (liver damage, jaundice), blood (rarely Methemoglobinemia, hemolytic anemia), urinary system (kidney damage, hematuria, hemoglobinuria, albuminuria), behavior/central nervous system (CNS depression, headache, seizures, somnolence, tremor, psychosis, muscle weakness, coma), cardiovascular system (lowering of blood pressure, dysrhythmia). Oral mucosa, vomitus, stools, and saliva may be stained blue or green following ingestion. Aspiration pneumonia may develop following emesis (vomiting).

**Aspiration hazard** No information available

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

**Chronic Toxicity** Repeated or prolonged skin contact may cause thickening of the skin

**Sensitization:** No information available

**Mutagenic Effects:** Animal experiments showed mutagenic effects

**Carcinogenic effects:** Not considered carcinogenic

| Components                   | IARC       | ACGIH - Carcinogens | NTP        | OSHA HCS - Carcinogens | Australia - Notifiable Carcinogenic Substances | Australia - Prohibited Carcinogenic Substances |
|------------------------------|------------|---------------------|------------|------------------------|--|--|
| Copper Sulfate, Pentahydrate | Not listed | Not listed          | Not listed | Not listed             | Not listed                                     | Not listed                                     |

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available

**Developmental Effects:** No information available

**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** No information available

**STOT - repeated exposure** No information available

**Target Organs:** No information available

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**



## 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects:** Aquatic environment.

*Copper Sulfate, Pentahydrate - 7758-99-8*

**Freshwater Fish Species Data:** 0.09 - 0.19 mg/L LC50 *Oncorhynchus mykiss* 96 h static 1  
0.1478 - 0.165 mg/L LC50 *Oncorhynchus mykiss* 96 h flow-through 1  
0.66 - 1.15 mg/L LC50 *Lepomis macrochirus* 96 h semi-static 1  
0.96 - 1.8 mg/L LC50 *Lepomis macrochirus* 96 h static 1  
0.6752 mg/L LC50 *Pimephales promelas* 96 h static 1

**Water Flea Data:** 0.147 - 0.227 mg/L EC50 *Daphnia magna* 48 h

**Persistence and degradability:** If released to soil, copper sulfate may leach to groundwater, be partly oxidized, or bind to humic materials, clay, or hydrous of iron and manganese. In water, it will bind to carbonates as well as humic materials, clay and hydrous oxides of iron and manganese. Copper is accumulated by plants and animals, but it does not appear to biomagnify from plants to animals. This lack of biomagnification appears common with heavy metals. In air, copper aerosols (in general) have a residence time of 2 to 10 days in an unpolluted atmosphere and 0.1 to >4 in a polluted, urban areas.

**Bioaccumulative potential:** No information available

**Mobility:** No information available

## 13. DISPOSAL CONSIDERATIONS

### Disposal Methods

**Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal

| Components                   | RCRA - F Series Wastes | RCRA - K Series Wastes | RCRA - P Series Wastes | RCRA - U Series Wastes |
|------------------------------|------------------------|------------------------|------------------------|------------------------|
| Copper Sulfate, Pentahydrate | None                   | None                   | None                   | None                   |

## 14. TRANSPORT INFORMATION

### DOT

**UN-No:** UN3077  
**Proper Shipping Name:** Environmentally hazardous substance, solid, n.o.s. (Cupric Sulfate)  
**Hazard Class:** 9  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**ERG No:** 171  
**Marine Pollutant:** Marine Pollutant  
**DOT RQ (lbs):** No information available

**Symbol(s):** G

### TDG (Canada)

**UN-No:** UN3077  
**Proper Shipping Name:** Environmentally hazardous substance, solid, n.o.s.  
**Hazard Class:** 9

**Product code:** C1431

**Product name:** COPPER SULFATE,  
PENTAHYDRATE, GRANULAR, FCC

## 14. TRANSPORT INFORMATION

**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** No information available

### ADR

**UN-No:** UN3077  
**Proper Shipping Name:** Environmentally hazardous substance, solid, n.o.s.  
**Hazard Class:** 9  
**Packing Group:** III  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

### IMO / IMDG

**UN-No:** UN3077  
**Proper Shipping Name:** Environmentally hazardous substance, solid, n.o.s.  
**Hazard Class:** 9  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant:** Marine Pollutant  
**EMS:** F-A  
**MFAG:** No information available  
**Maximum Quantity:** No information available

### RID

**UN-No:** UN3077  
**Proper Shipping Name:** Environmentally hazardous substance, solid, n.o.s.  
**Hazard Class:** 9  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Classification Code:** No information available  
**Description:** No information available

### ICAO

**UN-No:** UN3077  
**Proper Shipping Name:** Environmentally hazardous substance, solid, n.o.s.  
**Hazard Class:** 9  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** No information available

### IATA

**UN-No:** UN3077  
**Proper Shipping Name:** Environmentally hazardous substance, solid, n.o.s.  
**Hazard Class:** 9  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**ERG Code:** 9L  
**Description:** No information available

## 15. REGULATORY INFORMATION

### International Inventories

**Product code:** C1431

**Product name:** COPPER SULFATE,  
PENTAHYDRATE, GRANULAR, FCC

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| Components                   | U.S. TSCA  | KOREA KECL  | Philippines (PICCS) | Japan ENCS  | CHINA   | Australia (AICS) | EINECS-No.  |
|------------------------------|------------|-------------|---------------------|-------------|---------|------------------|-------------|
| Copper Sulfate, Pentahydrate | Not Listed | Not present | Present             | Not present | Present | Present          | Not present |

## U.S. Regulations

Copper Sulfate, Pentahydrate

FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1261

## California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

### Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

### Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

| Components                   | Carcinogen | Developmental Toxicity | Male Reproductive Toxicity | Female Reproductive Toxicity: |
|------------------------------|------------|------------------------|----------------------------|-------------------------------|
| Copper Sulfate, Pentahydrate | Not Listed | Not Listed             | Not Listed                 | Not Listed                    |

## CERCLA/SARA

| Components                   | CERCLA - Hazardous Substances and their Reportable Quantities | Section 302 Extremely Hazardous Substances and TPQs | Section 302 Extremely Hazardous Substances and RQs | Section 313 - Chemical Category | Section 313 - Reporting de minimis |
|------------------------------|---|---|--|---------------------------------|------------------------------------|
| Copper Sulfate, Pentahydrate | None  | None  | None   | None                            | None                               |

## U.S. TSCA

| Components                   | TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS) | TSCA 8(d) -Health and Safety Reporting |
|------------------------------|---|--|
| Copper Sulfate, Pentahydrate | Not Applicable  | Not Applicable                         |

## Canada

### WHMIS hazard class:

D1B Toxic materials

D2B Toxic materials

Copper Sulfate, Pentahydrate

D2B

### Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

## Inventory

| Components                   | Canada (DSL) | Canada (NDSL) |
|------------------------------|--------------|---------------|
| Copper Sulfate, Pentahydrate | Not Listed   | Not Listed    |

| Components                   | CEPA Schedule I - Toxic Substances | CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting |
|------------------------------|------------------------------------|---|
| Copper Sulfate, Pentahydrate | Not listed                         | Not listed  |

Product code: C1431

Product name: COPPER SULFATE,  
PENTAHYDRATE, GRANULAR, FCC

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## EU Classification

### R-phrase(s)

R25 - Toxic if swallowed.

R36 - Irritating to eyes.

R38 - Irritating to skin.

R50 - Very toxic to aquatic organisms.

R53 - May cause long-term adverse effects in the aquatic environment.

### S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S46 - If swallowed, seek medical advice immediately and show this container or label.

S60 - This material and its container must be disposed of as hazardous waste.

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

| Components                   | Classification | Concentration Limits: | Safety Phrases |
|------------------------------|----------------|-----------------------|----------------|
| Copper Sulfate, Pentahydrate |                | No information        |                |

The product is classified in accordance with Annex VI to Directive 67/548/EEC

### Indication of danger:

T - Toxic

Xi - Irritant.

Xn



Xi



N



## 16. OTHER INFORMATION

## 16. OTHER INFORMATION

**Preparation Date:** 03/11/2015  
**Revision Date:** 1/28/2016  
**Prepared by:** Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Safety Data Sheet**