SDS

永华化学股份有限公司
YONGHUA CHEMICAL CO., LTD.

Copper sulfate pentahydrate

1. Product Identification

Synonyms: Copper(II) sulfate pentahydrate

CAS No.: 7758-99-8

Manufacturer/supplier:

Yonghua Chemical Co., Ltd.

Address: Xiangqiao Village, Zhitang(Heshi)Town, Changshu City 215500,

Jiangsu Province, China

Emergency phone：0086 512 52549653

Website：www.yonghuareagents.com

2. Composition/Information on Ingredients

CAS No.	Chemical Name	Content	EINECS#
7758-99-8	Copper sulfate pentahydrate	≤100	231-847-6

Hazard Symbols: XN

Risk Phrases: 22 36/38

3. Hazards Identification

EMERGENCY OVERVIEW

Harmful if swallowed. Irritating to eyes and skin.Air sensitive.Hygroscopic (absorbs moisture from the air).

Potential Health Effects

Eye:

Exposure to particulates or solution may cause conjunctivitis, ulceration, and corneal abnormalities. Causes eye irritation and possible burns.

Skin:

May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Causes skin irritation and possible burns. May cause itching eczema.

Ingestion:

Harmful if swallowed. May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. Ingestion of large amounts of copper salts may cause bloody stools and vomit, low blood pressure, jaundice and coma. Ingestion of copper

compounds may produce systemic toxic effects to the kidney and liver and central nervous excitation followed by depression.

Inhalation:

May cause ulceration and perforation of the nasal septum if inhaled in excessive quantities. Causes respiratory tract irritation with possible burns.

Chronic:

Prolonged or repeated eye contact may cause conjunctivitis. May cause liver and kidney damage. May cause anemia and other blood cell abnormalities. Individuals with Wilson's disease are unable to metabolize copper. Thus, copper accumulates in various tissues and may result in liver, kidney, and brain damage. Laboratory experiments have resulted in mutagenic effects. May cause allergic skin reaction in some individuals. Chronic copper poisoning in man is recognized in the form of Wilson's disease.

4. First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:

Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion:

Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation:

Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician:

Individuals with Wilson's disease are more susceptible to chronic copper poisoning.

Antidote: The use of d-Penicillamine as a chelating agent should be determined by qualified medical personnel.

5. Fire Fighting Measures

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance is noncombustible. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.

Extinguishing Media:

Use extinguishing media most appropriate for the surrounding fire.

Use water spray, dry chemical, carbon dioxide, or appropriate foam.

6. Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions.

Provide ventilation. Place under an inert atmosphere.

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7. Handling and Storage

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Do not ingest or inhale. Handle under an inert atmosphere. Store protected from air.

Storage:

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Do not expose to air. Store protected from moisture. Store under an inert atmosphere.

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8. Exposure Controls/Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits CAS# 7758-98-7: United Kingdom, WEL - TWA: (listed as copper): 0.2 mg/m3 TWA (fum 1 mg/m3 TWA (dust and mist) United Kingdom, WEL - STEL: (listed as copper): 0.6 mg/m3 STEL (fume); 2 mg/m3 STEL (dust and mist) United States OSHA: 0.1 mg/m3 TWA (fume); 1 mg/m3 TWA (dusts and mists) (listed under Copper).

Belgium - TWA: (listed as copper): 0.2 mg/m3 VLE (fume); 1 mg/m3 (dust and mist) France - VME: (listed as copper): 0.2 mg/m3 VME (fume); 1 mg/m3 V (dust, as Cu) France - VLE: (listed as copper): 2 mg/m3 VLE (dust, as Cu) Germany: (listed as copper): 0.2 mg/m3 VME (fume); 1 mg/m3 VME (d as Cu) Malaysia: (listed as copper): 0.2 mg/m3 TWA (fume, as Cu); 1 mg/m TWA (dust and mist, as Cu) Netherlands: (listed as copper): 0.2 mg/m3 MAC (smoke); 1 mg/m3 M (dust) Russia: 0.5 mg/m3 TWA Russia: (listed as copper): 0.5 mg/m3 STEL (dust) Spain: (listed as copper): 0.2 mg/m3 VLA-ED (fume); 1 mg/m3 VLA-E (dust and mist, as Cu) CAS# 7758-99-8: United Kingdom, WEL - TWA: (listed as copper): 0.2 mg/m3 TWA (fum 1 mg/m3 TWA (dust and mist) United Kingdom, WEL - STEL: (listed as copper): 0.6 mg/m3 STEL (fume); 2 mg/m3 STEL (dust and mist) United States OSHA: 0.1 mg/m3 TWA (fume); 1 mg/m3 TWA (dusts and mists) (listed under Copper).

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(fume); 1 mg/m3 VLA-E (dust and mist, as Cu) Personal Protective Equipment Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

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9. Physical and Chemical Properties

Physical State: Crystals

Color: blue

Odor: Odorless

pH: Not available.

Vapor Pressure: 7.3 mm Hg @ 25 deg C

Viscosity: Not available.

Boiling Point: 150 deg C (dec)

Freezing/Melting Point: 110 deg C (dec)

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

Decomposition Temperature:

Solubility in water: Soluble.

Specific Gravity/Density: 2.2840g/cm3

Molecular Formula: CuO4S.5H2O

Molecular Weight: 249.68

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10. Stability and Reactivity

Chemical Stability:

Stable at room temperature in closed containers under normal storage and handling conditions. Air sensitive.

Conditions to Avoid:

High temperatures, incompatible materials, dust generation, exposure to air, exposure to moist air or water.

Incompatibilities with Other Materials:

Moisture, air, steel, finely powdered metals, hydroxylamine, magnesium, hydrazine, nitromethane.

Hazardous Decomposition Products:

Oxides of sulfur, irritating and toxic fumes and gases, oxides of copper, copper fumes.

Hazardous Polymerization: Has not been reported.

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11. Toxicological Information

RTECS#:

CAS# 7758-99-8: GL8900000 LD50/LC50:

CAS# 7758-99-8: Oral, mouse: LD50 = 43 mg/kg; Oral, rat: LD50 = 300 mg/kg; Skin, rat: LD50 = >2 gm/kg.

Carcinogenicity:

Copper(II) sulfate pentahydrate - Not listed by ACGIH, IARC, or NTP.

Other:

See actual entry in RTECS for complete information.

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12. Ecological Information

Ecotoxicity:

Fish: Rainbow trout: LC50 = 0.1-2.5 mg/L; 96 Hr; UnspecifiedFish: Harlequin fish: LC50 =0.1-2.5 mg/L; 96 Hr; UnspecifiedFish: Goldfish: LC50 = 0.1-2.5 mg/L; 96 Hr; UnspecifiedWater flea Daphnia: EC50 = 0.24 mg/L; 48 Hr; UnspecifiedIn soil, copper sulfate is partly washed down to lower levels, partly bound by soil components, and partly oxidatively transformed. Copper has a strong affinity for hydrous iron and manganese oxides, clays, carbonate minerals, and organic matter. Sorption to these materials ... suspended in the water column & in the bed sediments, results in relative enrichment of the solid phase and reduction in dissolved levels.

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13. Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

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14. Transport Information

IATA

Shipping Name: Copper sulfate pentahydrate

Hazard Class: 9

UN Number: 3077

Packing Group: III

IMO

Shipping Name: Copper sulfate pentahydrate

Hazard Class: 9

UN Number: 3077

Packing Group: III

RID/ADR

Shipping Name: Copper sulfate pentahydrate

Hazard Class: 9

UN Number: 3077

Packing Group: III

15.Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 22 Harmful if swallowed.

R 36/38 Irritating to eyes and skin.

Safety Phrases:

S 22 Do not breathe dust.

WGK (Water Danger/Protection)

CAS# 7758-99-8: 2

Canada

CAS# 7758-99-8 is not listed on Canada's Ingredient Disclosure List.

US FEDERAL

TSCA

CAS# 7758-99-8 is not on the TSCA Inventory because it is a hydrate.

It is considered to be listed if the CAS number for the anhydrous form

is on the inventory (40CFR720.3(u)(2)).

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16. Other Information

Yonghua Chemical Co., Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

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