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Material Safety Data Sheets (MSDS)

Cupric Sulphate Pentahydrate

Identification of Product

Chemical Code: CHE-C20

Chemical Name: Cupric Sulphate Pentahydrate

Chemical Grade:

Chemical Formula: $CuSO_4 \cdot 5H_2O$

Chemical Weight: 249,69 g/mol

CAS No: 7758-99-8

Chemical Synonyms: Blue Vitriol,
Copper(II) Sulphate Pentahydrate,
Copper Sulphate Pentahydrate.

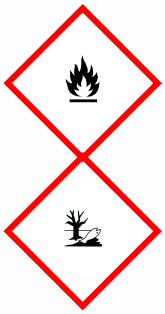
Hazards Identification

REACH No: No Data Available

Signal Word: Warning

Supplemental Hazard Information:

Additional Hazard Information: This substance contains no components considered to be either persistent, bio-accumulative and toxic (PBT), or very persistent and very bio-accumulative (vPvB) at levels of 0.1% or higher.



Hazards statements

H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

P273 - Avoid release to the environment.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 - Dispose of contents/ container to an approved waste disposal plant.

Composition of Chemical

Chemical Formula: $CuSO_4 \cdot 5H_2O$

EC No 1272/2008: No Data Available

First Aid Measures

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

If: Inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

If: Skin Contact: Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

If: Eye Contac: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If: Swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Important Symptoms: The most important known symptoms and effects are described in the labeling section.

Immediate Medical Attention: No Data Available

Firefighting Measures

Extinguishing Media: Use Water spray, Alcohol-resistant foam, Dry chemical or Carbon Dioxide.

Hazards Arising: Sulphur Oxides, Copper Oxides.

Advice for Firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Info for Firefighting: No Data Available

Accidental Release Measures

Personal Precautions: Wear respiratory protection.
Avoid dust formation.

Avoid breathing vapours, mist or gas.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Avoid breathing dust.

Enviromental Precautions: Prevent further leakage or spillage if safe to do so.
Do not let product enter drains.
Discharge into the environment must be avoided.

Method for Containment: Pick up and arrange disposal without creating dust.
Sweep up and shovel.
Keep in suitable, closed containers for disposal.

Handling and Storage

Personal Precautions: Avoid contact with skin and eyes.
Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.

Enviromental Precautions: Store in cool place.
Keep container tightly closed in a dry and well-ventilated place.
Air sensitive.
Hygroscopic.
Handle and store under inert gas.
Storage class (TRGS 510): Non Combustible Solids.

Exposure Controls | Personal Protection

Derived No Effect Level (DNEL)

Workers | Application Area | Exposure Routes | Health Effect | Value

No Data Available

Consumers | Application Area | Exposure Routes | Health Effect | Value

No Data Available

Predicted No Effect Concentration (PNEC)

No Data Available

Engineering Controls: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Eye/Face Protection: Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact -
Material: Nitrile rubber. Minimum layer thickness: 0,11 mm.
Break through time: 480 min. Material tested: Dermatril®.

Splash contact -
Material: Nitrile rubber. Minimum layer thickness: 0,11 mm.
Break through time: 480 min. Material tested: Dermatril®.
Data source: KCL GmbH, D-36124. Test method: EN374.

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection: Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Physical and Chemical Properties

Appearance: Blue or Ultramarine crystals, granules or powder

Odour: No Data Available

Odour Threshold: No Data Available

pH: 3,7 - 4,5 at 50 g/l at 25 °C

Melting Point: Melting point/range: 110 °C (dec).

Boiling Point: No Data Available

Flash Point: No Data Available

Evaporation: No Data Available

Flammability: No Data Available

Upper/Lower Flammability or Explosive Limits: No Data Available

Vapour pressure: 9,7 hPa at 25 °C

Vapour density: No Data Available

Relative density: 2,284 g/cm3

Water solubility: Soluble

Partition Coefficien: No Data Available

Auto-ignition Temperature: No Data Available

Decomposition Temperature: No Data Available

Viscosity: No Data Available

Explosive properties: No Data Available

Oxidizing properties: No Data Available

Other Safety Info: No Data Available

Stability and Reactivity

Reactivity: No Data Available

Chemical Stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: No Data Available

Conditions to Avoid: Exposure to moisture.

Incompatible Materials: Powdered Metals, Anhydrous Copper(II) Sulphate.
Reacts violently with: Hydroxylamine, Magnesium.

Hazardous Decomposition Products: No Data Available

Toxicological Information

Acute Toxicity: LD50 Oral - Rat - 482 mg/kg - (OECD Test Guideline 401)
Remarks: Anhydrous
LD50 Dermal - Rat - > 2.000 mg/kg - Remarks: Anhydrous

Skin Corrosion/Irritation: Irritating to skin

Serious Eye damage | Eye Irritation: Irritating to eyes.

Cell Mutagenicity: No Data Available

Carcinogenicity: IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity: No Data Available

Specific Target Organ Toxicity - Single Exposure: No Data Available

Specific Target Organ Toxicity - Repeated Exposure: No Data Available

Aspiration Hazard: No Data Available

Ecological Information

Ecological Toxicity: Toxicity to daphnia and other aquatic invertebrates:
EC50 - Daphnia magna (Water flea) - 0,024 mg/l - 48 h

Ecological Persistence and degradability: The methods for determining the biological degradability are not applicable to inorganic

substances.

Bioaccumulative Potential: No Data Available

Mobility in Soil: No Data Available

Results of PBT and vPvB Assessment: This substance contains no components considered to be either persistent, bio-accumulative and toxic (PBT), or very persistent and very bio-accumulative (vPvB) at levels of 0.1% or higher.

Other Adverse Effect: Very toxic to aquatic life with long lasting effects.

Disposal Considerations

Waste Treatment Methods: Product -
Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging - Dispose of as unused product.

Transport Information

UN Number: ADR/RID: 3077
IMDG: 3077
IATA: 3077

UN Shipping Hazard: ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate)
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate)
IATA: Environmentally hazardous substance, solid, n.o.s. (Copper Sulphate Pentahydrate)

Transport Hazard Class: ADR/RID: 9
IMDG: 9
IATA: 9

Packaging Group: ADR/RID: III
IMDG: III
IATA: III

Enviromental Hazards: ADR/RID: yes
IMDG Marine pollutant: yes
IATA: yes

Special Precautions: No Data Available

Regulatory Information

Safety, Health and environmental regulations: This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Chemical Safety Assessment: For this product a chemical safety assessment was not carried out.

Additional Info: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS: GL8900000