

**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifiers**Product name: **COPPER (II) SULPHATE HYDRATE**CAS-No.: **23254-43-5**Product Number: **A67325****1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses: Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**Company : Philip Harris Ltd., 2 Gregory Street, Hyde, Cheshire, SK14 4HR,  
UNITED KINGDOM

Telephone: +44 (0)845 1200 506 Fax: +44 (0)161 367 2140

Email: enquiries@philipharris.co.uk

**1.4 Emergency telephone number**Emergency Phone #: **+44 (0)845 1200 506****2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****According to Regulation (EC) No1272/2008;** Acute toxicity (Category 4); Eye irritation (Category 2); Skin irritation (Category 2); Acute aquatic toxicity (Category 1); Chronic aquatic toxicity (Category 1)**According to European Directive 67/548/EEC as amended:** Highly flammable.**2.2 Label elements**

Pictogram



Signal word

Warning

**Hazard statement(s):** H319 Causes serious eye irritation; H315 Causes skin irritation; H302 Harmful if swallowed; H410 Very toxic to aquatic life with long lasting effects.**Precautionary statement(s):** 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.**Hazard symbol(s):** Xn Harmful N Dangerous for the environment**R-phrase(s):** R22 Harmful if swallowed. R36/38 Irritating to eyes and skin. R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S-phrases(s):** S22 Do not breathe dust. 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.

**2.3 Other hazards** – no data available

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

##### Copper (II) sulphate hydrate

Formula: **CuO<sub>4</sub>S · 5H<sub>2</sub>O**

Molecular Weight: **159.61g/mol**

CAS-No.: **23254-43-5**

EC-No.: **231-847-6**

Index-No.: **029-004-00-0**

### 4. FIRST AID MEASURES

#### 4.1 Description of 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.

**In case of skin contact:** Wash off with soap and plenty of water.

**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes.

**If swallowed:** Never give anything by mouth to an unconscious person. Rinse mouth with water.

**4.2 Most important symptoms and effects, both acute and delayed:** no data available

**4.3 Indication of immediate medical attention and special treatment needed:** no data available

### 5. FIRE-FIGHTING MEASURES

#### 5.1 Extinguishing media

**Suitable extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture:** no data available

**5.3 Precautions for fire-fighters:** Wear self contained breathing apparatus for fire fighting if necessary.

**5.4 Further information:** no data available

### 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

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

**6.3 Methods and materials for containment and cleaning up:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

## **7. HANDLING AND STORAGE**

**7.1 Precautions for safe handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

**7.2 Conditions for safe storage, including any incompatibilities:** Keep container tightly closed in a dry and well-ventilated place. Store in cool place. Air sensitive. hygroscopic Handle and store under inert gas.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters:** Contains no substances with occupational exposure limit values.

### **8.2 Exposure controls:**

**Appropriate engineering controls:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment; Eye/face protection:** Safety glasses with side-shields conforming to EN166 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 glove's 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.

**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**

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- a) Appearance:                    **Form:** Solid                    **Colour:** Light Grey
- b) Odour:                                    no data available
- c) Odour Threshold:                    no data available
- d) pH:                                        no data available
- e) Melting/freezing point:            200 °C                    Melting point/range: no data available
- f) Initial boiling point and boiling range: no data available
- g) Flash point:                            no data available
- h) Evaporation rate:                    no data available
- i) Flammability (solid, gas):            no data available
- j) Upper/lower flammability or explosive limits: no data available
- k) Vapour pressure:                    9.7 hPa at 25 °C
- l) Vapour density:                        no data available
- m) Relative density:                    3.603 g/cm<sup>3</sup>
- n) Water solubility:                    no data available
- o) Partition coefficient: n-octanol/water: no data available
- p) Autoignition temperature: no data available
- q) Decomposition temperature: no data available
- r) Viscosity:                                no data available
- s) Explosive properties:                    no data available
- t) Oxidizing properties:                    no data available

**9.2 Other safety information:** no data available

## 10. STABILITY AND REACTIVITY

**10.1 Reactivity:** no data available

**10.2 Chemical stability:** Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions:** no data available

**10.4 Conditions to avoid:** Air sensitive. Hygroscopic

**10.5 Incompatible materials:** Powdered metals, Anhydrous copper(II) sulphate, reacts violently with: hydroxylamine, Magnesium

**10.6 Hazardous decomposition products:** Hazardous decomposition products formed under fire conditions. - Sulphur oxides, Copper oxides

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity:** no data available

**Skin corrosion/irritation:** no data available

**Serious eye damage/eye irritation:** no data available

**Respiratory or skin sensitization:** Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

**Germ 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:** Possible risk of congenital malformation in the foetus. Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

**Specific target organ toxicity - single exposure:** no data available

**Specific target organ toxicity - repeated exposure:** no data available

**Aspiration hazard:** no data available

#### Potential health effects

**Inhalation** May be harmful if inhaled. Causes respiratory tract irritation.

**Ingestion** Harmful if swallowed.

**Skin** May be harmful if absorbed through skin. Causes skin irritation.

**Eyes** Causes serious eye irritation.

**Signs and Symptoms of Exposure:** Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information:** RTECS: Not available

## 12. ECOLOGICAL INFORMATION

**12.1 Toxicity:** Toxicity to daphnia and other aquatic invertebrates.

EC50 - *Daphnia magna* (Water flea) - 0.024 mg/L - 48 h

**12.2 Persistence and degradability:** no data available

**12.3 Bioaccumulative potential:** no data available

**12.4 Mobility in soil:** no data available

**12.5 Results of PBT and vPvB assessment:** no data available

**12.6 Other adverse effects:** Very toxic to aquatic life.

### 13. DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment methods

**Product:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. 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.

### 14. TRANSPORT INFORMATION

#### 14.1 UN-Number

ADR/RID: 3077 IMDG: 3077 IATA: 3077

#### 14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Copper(II) sulphate hydrate)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Copper(II) sulphate hydrate)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Copper(II) sulphate hydrate)

#### 14.3 Transport hazard class(es)

ADR/RID: 9 IMDG: 9 IATA: 9

#### 14.4 Packaging group

ADR/RID: III IMDG: III IATA: III

#### 14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: YES IATA: no

**14.6 Special precautions for users:** EMS-No: F-A, S-F. EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

### 15. REGULATORY INFORMATION

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

**16. OTHER INFORMATION:** Acute Tox. Acute toxicity; Aquatic Acute Acute aquatic toxicity; Aquatic Chronic Chronic aquatic toxicity; Eye Irrit. Eye irritation; H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation. H410 Very toxic to aquatic life with long lasting effects. N Dangerous for the environment; Xn Harmful; R22 Harmful if swallowed. R36/38 Irritating to eyes and skin. R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.