Issue date: 7/17/2003
Revision date: 4/2/2024

# Safety Data Sheet

## 1. Chemical product and company identification

| | | |
|---|---|---|
| Product name | : | Copper(Ⅱ) chloride dihydrate |

**Company information**

| | | |
|---|---|---|
| Name of manufacturer | : | KANTO CHEMICAL CO., INC. |
| Address | : | 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP |
| Name of section | : | Business Administration Department, Reagent Division |
| Telephone number | : | +81-3-6214-1090 |
| Facsimile number | : | +81-3-3241-1047 |
| Mail address | : | BC32@kanto.co.jp |
| Reference No | : | 07489 |
| Recommended use | : | For research use only |
| Restrictions on use | : | Seek expert judgment when using the product for applications other than those recommended. |

## 2. Hazards identification

**GHS classification**

| | | |
|---|---|---|
| Health hazards | Acute toxicity (oral) | Category 3 |
| | Skin corrosion/irritation | Category 2 |
| | Serious eye damage/eye irritation | Category 2A |
| | Skin sensitization | Category 1 |
| | Reproductive toxicity | Category 2 |
| Environmental hazards | Aquatic acute | Category 1 |
| | Aquatic chronic | Category 1 |

Hazard pictograms

Signal word : Danger

Hazard statements :
Toxic if swallowed
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
Suspected of damaging fertility or the unborn child
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects

**Precautionary statements**

Prevention :
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.

| | | |
|---|---|---|
| | | Avoid release to the environment.<br>Wear protective gloves/protective clothing/eye protection/face protection. |
| Response | : | IF SWALLOWED: Immediately call a POISON CENTER or doctor.<br>IF ON SKIN: Wash with plenty of water.<br>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>IF exposed or concerned: Get medical advice/attention.<br>Rinse mouth.<br>If skin irritation or rash occurs: Get medical advice/attention.<br>If eye irritation persists: Get medical advice/attention.<br>Take off contaminated clothing and wash it before reuse.<br>Collect spillage. |
| Storage | : | Store locked up. |
| Disposal | : | Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. |

## 3. Composition/information on ingredients

Distinction of substance or mixture : Substance

| Chemical name | Concentration (%) | Formula | TSCA | EC-No. | CAS RN |
|---|---|---|---|---|---|
| Copper(Ⅱ) chloride dihydrate | ≥ 97.5 | CuCl2·2H2O | Listed | 231-210-2 | 10125-13-0 |

## 4. First aid measures

### First aid measures

| | | |
|---|---|---|
| First-aid measures after inhalation | : | Remove the victim to fresh air, and make him blow his nose and gargle. |
| First-aid measures after skin contact | : | Wash the affected areas under running water. |
| First-aid measures after eye contact | : | Wash the affected areas under running water for at least 15 minutes. If necessary, get medical treatment. |
| First-aid measures after ingestion | : | Give the victim water or salt water and make him vomit. Get medical attention. |
| Personal Protection in First Aid and Measures | : | Rescuers should wear proper protective equipment like rubber gloves, goggles. |

## 5. Fire fighting measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | This product is noncombustible. |
| Unsuitable extinguishing media | : | None |
| Fire hazard | : | Thermal decomposition emits harmful Chlorine gas and copper(Ⅰ) chloride fume. |
| Firefighting instructions | : | Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area. |
| Personal protection (Emergency | : | Wear breathing apparatus. |

response)

## 6. Accidental release measures

### Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of dust. Conduct operations from upwind and evacuate people downwind.

### Environmental precautions

Environmental precautions : Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

### Methods and Equipment for Containment and Cleaning up

For containment : Sweep up in a chemical waste container. Neutralize residue with calcium hydroxide or sodium carbonate water solution and then flush contaminated area with copious amounts of water.

## 7. Handling and storage

### Handling

Technical measures : If necessary, wear proper protective equipment to avoid contact with skin or inhalation of dust.

Precautions for safe handling : Avoid formation of dust and aerosols.

### Storage

Storage conditions : As the chemical is deliquescent, keep the bottle tightly closed and store in a cool place.

Material used in packaging/containers : Glass, polyethylene, polypropylene.

## 8. Exposure controls / Personal protection equipment

| | |
|---|---|
| ACGIH TWA | Not established |

Appropriate engineering controls : Install a local ventilation system in case of dusty condition.

### Protective equipment

Respiratory protection : If necessary, wear dust mask

Hand protection : Impervious protective gloves

Eye protection : Safety goggles

Skin and body protection : Protective clothing, protective boots

## 9. Physical and chemical properties

Physical state : Solid

Color : Bluish green

Odor : Odorless

pH : The aqueous solution is acidic.

Melting point : 498 ° C

Freezing point : No data available

| | | |
|---|---|---|
| Boiling point | : | 993 ° C (Decomposition) |
| Flash point | : | No data available |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | 110 ° C (Lose 2 molecules of water of crystallization) |
| Flammability | : | Non flammable. |
| Vapor pressure | : | No data available |
| Relative density | : | 2.39 |
| Density | : | No data available |
| Relative gas density | : | No data available |
| Solubility | : | Organic solvents: Soluble in acetone, ethanol, methanol, pyridine.<br>Water: 53.3 % (0℃) |
| Partition coefficient n-octanol/water (log Pow) | : | No data available |
| Explosive limits (vol %) | : | No data available |
| Viscosity, kinematic | : | No data available |
| Particle characteristics | : | No data available |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | Has oxidative properties. |
| Chemical stability | : | Stable under normal conditions. Deliquescent. |
| Possibility of hazardous reactions | : | When it is ignited, it releases chlorine and becomes copper(I) chloride. |
| Conditions to avoid | : | Light, heati, moisture. |
| Incompatible materials | : | Alkaline substances, reducing substances. |
| Hazardous decomposition products | : | Chlorine, copper(Ⅰ) chloride. |

## 11. Toxicological information

| | | |
|---|---|---|
| Acute toxicity (oral) | : | Toxic if swallowed<br>rat LD50=140mg/kg (as anhydrous salt) |
| Acute toxicity (dermal) | : | Classification not possible |
| Acute toxicity (inhalation) | : | No classification (gas)<br>Classification not possible (vapor)<br>Classification not possible (dust, mist) |
| Skin corrosion/irritation | : | Causes skin irritation<br>Anhydrous salt : Based on the description of the human health effects of copper (though no data are available on copper chloride per se): "These data provide suggestive evidence that copper may be irritative to the skin". The substance is thus considered a skin irritant (though the severity of the effects is unknown), and classified into category 2. |
| Serious eye damage/irritation | : | Causes serious eye irritation<br>Anhydrous salt : Based on the evidence of "severe effects" from the rabbit eye irritation tests, and the human evidence: "Eye irritation was observed among workers occupationally exposed to copper dust." The substance is thus considered irritating to the eye (though the severity of the effects is unknown) and classified into category 2A. |
| Respiratory sensitization | : | Classification not possible |

| | | |
|---|---|---|
| Skin sensitization | : | May cause an allergic skin reaction<br>Based on the description of the effects on human health: "Copper and its salts may induce allergic dermatitis. Clinical signs include smarting, reddening, swelling, formation of vesicles and pustules." Also due to the fact that copper is classified into "Skin Sensitizing Substance" by the Japanese Society of Occupational Allergy, and "Skin Sensitizing Substance: Group 2" by the Japan Society for Occupational Health. These classifications, though not specifying copper chloride, seem to include copper compounds. Copper chloride, which is a copper compound, should thus cause skin sensitization. |
| Germ cell mutagenicity | : | Classification not possible |
| Carcinogenicity | : | Classification not possible |
| Reproductive toxicity | : | Suspected of damaging fertility or the unborn child<br>Anhydrous salt : No data on female reproductive toxicity were identified. However, the study results reported in EHC 200 suggest adverse effects on sperm production in males, though no information is provided for general toxicity. |
| STOT-single exposure | : | Classification not possible<br>In addition, the acute toxicity of copper compounds manifest as "vomiting, lethargy, acute hemolytic anemia, kidneys/liver damage, neurotoxicity, elevated blood pressure/respiratory rate, coma and death". |
| STOT-repeated exposure | : | Classification not possible<br>In addition, the chronic toxicity of copper compounds manifest as "retching, abdominal pain, vomiting, abdominal pain, vomiting and diarrhea". |
| Aspiration hazard | : | Classification not possible |

## 12. Ecological information

### Ecotoxicity

| | | |
|---|---|---|
| Aquatic acute | : | Very toxic to aquatic life<br>Marsupenaeus japonicus LC50=0.001mg/L/96h (as anhydrous salt) |
| Aquatic chronic | : | Very toxic to aquatic life with long lasting effects |

### Persistence and degradability

No additional information available

### Bioaccumulative potential

No additional information available

### Mobility in soil

No additional information available

### Hazardous to the ozone layer

| | | |
|---|---|---|
| Ozone | : | Classification not possible |

## 13. Disposal considerations

| | | |
|---|---|---|
| Ecological waste information | : | Disposal should be made by one of following methods. Or entrust approved waste disposal companies with the disposal.<br><br>Precipitation method :<br>Dissolve in water and add alkaline substances like calcium hydroxide or sodium carbonate to precipitate copper hydroxide |

or copper carbonate. Filter the precipitation and bury in a landfill site approved for hazardous-waste disposal.

Roasting method : In case of a large amount of the chemical, recover metal copper by roast reduction method.

<Note>
＊The pH of the neutralization should be above 8.5. The precipitation does not form completely below pH 8.5.
＊In case of disposal by roasting method, it is desirable to entrust to disposal companies.

Contaminated container and packaging : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

## 14. Transport information

**International Regulations**

**Transport by sea(IMDG)**

| | | |
|---|---|---|
| UN-No. (IMDG) | : | 2802 |
| Proper Shipping Name (IMDG) | : | COPPER CHLORIDE |
| Packing group (IMDG) | : | III |
| Transport hazard class(es) (IMDG) | : | 8 |

**Air transport(IATA)**

| | | |
|---|---|---|
| UN-No. (IATA) | : | 2802 |
| Proper Shipping Name (IATA) | : | Copper chloride |
| Packing group (IATA) | : | III |
| Transport hazard class(es) (IATA) | : | 8 |
| Marine pollutant | : | Applicable |
| MFAG-No | : | 154 |

## 15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

## 16. Other information

Data sources : Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .
Handbook of Dangerous Substances Springer-Verlag Tokyo (1991) .
Handbook of Poisonous and Deleterious substances, revised and enlarged edition, Yakumu Kohosa (2000) .
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .
NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253.