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 Category 2A

Serious eye damage/eye

irritation

Skin sensitization Category 1 Reproductive toxicity Category 2 Aquatic acute Category 1

hazards

Environmental

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

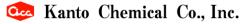
understood.

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.

Wear protective gloves/protective clothing/eye protection/face

protection.

Response IF SWALLOWED: Immediately call a POISON CENTER or doctor.

IF ON SKIN: Wash with plenty of water.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue

IF exposed or concerned: Get medical advice/attention.

Rinse mouth.

If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

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(${ m I\hspace{1em}I}$) chloride dihydrate	≥ 97.5	CuC12•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

Personal Protection in First

Aid and Measures

medical attention.

Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media

: This product is noncombustible.

Unsuitable extinguishing media

Fire hazard

Thermal decomposition emits harmful Chlorine gas and copper(I)

chloride fume.

Firefighting instructions

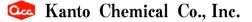
Move containers from fire area if it can be done without risk, if

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.

: If necessary, wear dust mask

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

Hand protection : Impervious protective gloves

Eye protection : Safety goggles

Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

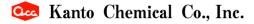
Physical state : Solid

Color : Bluish green
Odor : Odorless

pH : The aqueous solution is acidic.

Melting point : 498 $^{\circ}$ C

Freezing point : No data available



: 993 ° C (Decomposition) Boiling point

Flash point No data available Auto-ignition temperature : No data available

: 110 $^{\circ}$ C (Lose 2 molecules of water of crystallization) Decomposition temperature

Flammability : Non flammable. Vapor pressure : No data available

Relative density : 2 39

Density : No data available : No data available Relative gas density

Solubility Organic solvents: Soluble in acetone, ethanol, methanol, pyridine.

> Water: 53.3 % (0℃) : No data available

Partition coefficient n-

octanol/water (log Pow)

Explosive limits (vol %) : No data available : No data available Viscosity, kinematic Particle characteristics : No data available

10. Stability and reactivity

Reactivity : Has oxidative properties.

Chemical stability : Stable under normal conditions. Deliquescent.

: When it is ignited, it releases chlorine and becomes copper(I) Possibility of hazardous

reactions chloride.

Conditions to avoid : Light, heati, moisture.

Incompatible materials : Alkaline substances, reducing substances.

Hazardous decomposition : Chlorine, copper(I) chloride.

products

11. Toxicological information

Acute toxicity (oral) : Toxic if swallowed

rat LD50=140mg/kg (as anhydrous salt)

Acute toxicity (dermal) Classification not possible Acute toxicity (inhalation) No classification (gas)

Classification not possible (vapor) Classification not possible (dust, mist)

Skin corrosion/irritation : Causes skin irritation

> 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

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

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

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

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

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

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 laver

Ozone : Classification not possible

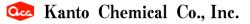
13. Disposal considerations

Ecological waste information : Disposal should be made by one of following methods. Or

entrust approved waste disposal companies with the disposal.

Precipitation method :

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.

 $\ensuremath{\bigstar}\xspace$ 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) : 8

(IMDG)

Air transport (IATA)

UN-No. (IATA) : 2802

Proper Shipping Name (IATA) : Copper chloride

Packing group (IATA) : III Transport hazard class(es) : 8

(IATA)

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.