

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING
Product Identifier

Perihalan Produk: **Copper (II) chloride dihydrate**
 Product Description: **Copper (II) chloride dihydrate**
 Cat No. : C/7960/60, C/7960/48
 Synonyms Cupric chloride dihydrate
 CAS No 10125-13-0
 Molecular Formula $\text{Cl}_2 \text{Cu} \cdot 2 \text{H}_2 \text{O}$

Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals.
 Uses advised against No Information available

Company

Thermo Fisher Scientific Fisher Scientific (M) Sdn Bhd
 Hap Seng Business Park, Lot 01-03, 01-04 Aras 1 Unity Square,
 No 12, Persiaran Perusahaan, Seksyen 23, 40300 Shah Alam,
 Selangor Darul Ehsan, Malaysia.
 Main line: +60 3-5525 7888

Supplier

E-mail address Enquiry.my@thermofisher.com

Emergency Telephone Number

Tel: +03-5525 7888
 CHEMTREC Malaysia **1-800-815-308** (Malay)
 CHEMTREC Malaysia (Kuala Lumpur) **+(60)-327884561** (Malay)

SECTION 2: HAZARDS IDENTIFICATION
Classification of the substance or mixture

| | |
|-----------------------------------|-------------------|
| Acute oral toxicity | Category 4 (H302) |
| Acute dermal toxicity | Category 4 (H312) |
| Skin Corrosion/Irritation | Category 2 (H315) |
| Serious Eye Damage/Eye Irritation | Category 1 (H318) |
| Acute aquatic toxicity | Category 1 (H400) |
| Chronic aquatic toxicity | Category 2 (H411) |

Label Elements


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Signal Word

Danger

Hazard Statements

H315 - Causes skin irritation
H318 - Causes serious eye damage
H302 + H312 - Harmful if swallowed or in contact with skin
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention

P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor
P330 - Rinse mouth
P362 + P364 - Take off contaminated clothing and wash it before reuse

Storage

P405 - Store locked up

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards

Toxicity to Soil Dwelling Organisms
Toxic to terrestrial vertebrates
This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS No | Weight % |
|--------------------------------|------------|----------|
| Copper (II) chloride dihydrate | 10125-13-0 | >95 |
| Cupric chloride | 7447-39-4 | - |

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General Advice

If symptoms persist, call a physician.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Ingestion

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if

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symptoms occur.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Causes severe eye damage. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Corrosive material. Non-combustible. Thermal decomposition can lead to release of irritating gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Copper oxides, Hydrogen chloride gas.

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.

Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

Methods and Material for Containment and Cleaning Up

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

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Precautions for Safe Handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Conditions for Safe Storage, Including any Incompatibilities

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Store contents under argon. Corrosives area. Do not store in metal containers. Store under an inert atmosphere. Protect from moisture.

Specific End Uses

Use in laboratories.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

| Component | Malaysia | ACGIH TLV | OSHA PEL |
|--------------------------------|----------|--------------------------|----------|
| Copper (II) chloride dihydrate | | TWA: 1 mg/m ³ | |
| Cupric chloride | | TWA: 1 mg/m ³ | |

| Component | European Union | The United Kingdom | Germany |
|--------------------------------|----------------|---|---|
| Copper (II) chloride dihydrate | | STEL: 2 mg/m ³ 15 min TWA: 1 mg/m ³ 8 hr | TWA: 0.01 mg/m ³ (8 Stunden). MAK Höhepunkt: 0.02 mg/m ³ |
| Cupric chloride | | STEL: 2 mg/m ³ 15 min TWA: 1 mg/m ³ 8 hr | TWA: 0.01 mg/m ³ (8 Stunden). MAK Höhepunkt: 0.02 mg/m ³ |

Exposure Controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles

Hand Protection

Protective gloves

Skin and body protection

Long sleeved clothing

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection

No protective equipment is needed under normal use conditions

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls

Prevent product from entering drains Do not allow material to contaminate ground water system Local authorities should be advised if significant spillages cannot be contained

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | |
|---|---|-----------------------------------|
| Appearance | Blue green | |
| Physical State | Solid | |
| Odor | Odorless | |
| Odor Threshold | No data available | |
| pH | 3.0-3.8 | |
| Melting Point/Range | 598 °C / 1108.4 °F | |
| Softening Point | No data available | |
| Boiling Point/Range | 993 °C / 1819.4 °F | |
| Flash Point | No information available | Method - No information available |
| Evaporation Rate | Not applicable | Solid |
| Flammability (solid,gas) | Not flammable | |
| Explosion Limits | No data available | |
| Vapor Pressure | No data available | |
| Vapor Density | Not applicable | Solid |
| Specific Gravity / Density | 2.54 (H2O=1) | |
| Bulk Density | 1.07 kg/m ³ | |
| Water Solubility | 1150 g/L (20°C) | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Autoignition Temperature | Not applicable | |
| Decomposition Temperature | 110 °C | |
| Viscosity | Not applicable | Solid |
| Explosive Properties | No information available | |
| Oxidizing Properties | Not oxidising | |
| Molecular Formula | Cl ₂ Cu . 2 H ₂ O | |
| Molecular Weight | 170.48 | |

SECTION 10: STABILITY AND REACTIVITY

Reactivity

None known, based on information available.

Chemical Stability

Hygroscopic.

Possibility of Hazardous Reactions

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Hazardous Polymerization Hazardous Reactions

Hazardous polymerization does not occur.
None under normal processing.

Conditions to Avoid

Avoid dust formation. Incompatible products. Excess heat. Exposure to moist air or water.

Incompatible Materials

Strong oxidizing agents. Metals.

Hazardous Decomposition Products

Copper oxides. Hydrogen chloride gas.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Product Information

(a) acute toxicity;

Oral

Category 4

Dermal

Category 4

Inhalation

No data available

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-----------------|-------------------|------------------|-----------------|
| Cupric chloride | 584 mg/kg (Rat) | 1224 mg/kg (Rat) | - |

(b) skin corrosion/irritation;

Category 2

(c) serious eye damage/irritation;

Category 1

(d) respiratory or skin sensitization;

Respiratory

No data available

Skin

No data available

(e) germ cell mutagenicity;

No data available

(f) carcinogenicity;

No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;

No data available

(h) STOT-single exposure;

No data available

(i) STOT-repeated exposure;

No data available

Target Organs

No information available.

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(j) aspiration hazard; Not applicable
Solid

Symptoms / effects, both acute and delayed Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

| Component | Freshwater Fish | Water Flea | Freshwater Algae | Microtox |
|--------------------------------|--|---------------------|------------------------------|--|
| Copper (II) chloride dihydrate | | | | = 0.16 mg/L EC50 Photobacterium phosphoreum 30 min as Cu++ = 0.27 mg/L EC50 Photobacterium phosphoreum 15 min as Cu++ = 1.29 mg/L EC50 Photobacterium phosphoreum 5 min as Cu++ |
| Cupric chloride | LC50: 0.120-0.130 mg/L/96h (Carp) LC50: 0.9 mg/L/96h (Bluegill sunfish) LC50: 0.08 mg/L/96h (Rainbow trout) | EC50: 0.04 mg/L/48h | EC50: 0.12 - 0.2 mg/L/96h | |

Persistence and degradability

Persistence
Degradability
**Degradation in sewage
treatment plant**

Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary
May persist, based on information available.
Not relevant for inorganic substances.
Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative potential

May have some potential to bioaccumulate

Mobility in soil

The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

Other adverse effects

No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

FSUC7960

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Waste from Residues/Unused Products

Should not be released into the environment Waste is classified as hazardous Dispose of in accordance with the European Directives on waste and hazardous waste Dispose of in accordance with local regulations

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

Other Information

Do not flush to sewer Waste codes should be assigned by the user based on the application for which the product was used Do not empty into drains Do not let this chemical enter the environment

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

UN-No UN2802
Hazard Class 8
Packing Group III
Proper Shipping Name COPPER CHLORIDE

Road and Rail Transport

UN-No UN2802
Hazard Class 8
Packing Group III
Proper Shipping Name COPPER CHLORIDE

IATA

UN-No UN2802
Hazard Class 8
Packing Group III
Proper Shipping Name COPPER CHLORIDE

Special Precautions for User

No special precautions required

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

X = listed

| Component | EINECS | TSCA | DSL | PICCS | ENCS | ISHL | IECSC | AICS | KECL |
|--------------------------------|-----------|------|-----|-------|------|------|-------|------|----------|
| Copper (II) chloride dihydrate | - | - | - | X | - | | X | X | - |
| Cupric chloride | 231-210-2 | X | X | X | X | X | X | X | KE-08923 |

| Component | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|--------------------------------|---|--|----------------------------|------------------------------------|
| Copper (II) chloride dihydrate | | | | Annex I - Y22 |
| Cupric chloride | | | | Annex I - Y22 |

National Regulations

Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected substance
This product does not contain any known or suspected substance

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SECTION 16: OTHER INFORMATION

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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23-Mar-2025

Revision Summary

Not applicable.

In accordance with local and national regulations: Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet