SAFETY DATA SHEET

Creation Date 28-November-2010 **Revision Date** 24-December-2021 **Revision Number** 8

1. Identification

Product Name **Copper(II) chloride dihydrate**

Cat No. : **C454-3; C454-500**

CAS-No 10125-13-0
Synonyms Cupric chloride dihydrate

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Importer/Distributor
Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Manufacturer
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number Chemtrec US: (800) 424-9300
Chemtrec EU: 001-703-527-3887

2. Hazard(s) identification

Classification

WHMIS 2015 Classification Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

Acute oral toxicity	Category 4
Acute dermal toxicity	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1

Label Elements

Signal Word
Danger

Hazard Statements
Harmful if swallowed or in contact with skin
Causes skin irritation
Causes serious eye damage

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Response
IF ON SKIN: Wash with plenty of soap and water
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER/doctor
Rinse mouth
Take off contaminated clothing
Disposal
Dispose of contents/container to an approved waste disposal plant

Other Hazards
Very toxic to aquatic life with long lasting effects

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Copper(2+) chloride dihydrate	10125-13-0	>95
Copper chloride (CuCl2)	7447-39-4	-

4. 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.

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

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

Most important symptoms/effects Causes severe eye damage. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Notes to Physician Treat symptomatically

5. Fire-fighting measures

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

Unsuitable Extinguishing Media No information available

Flash Point	No information available
Method -	No information available
Autoignition Temperature	Not applicable
Explosion Limits	
Upper	No data available
Lower	No data available
Oxidizing Properties	Not oxidising
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical
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.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	1	N/A

6. Accidental release measures

Personal Precautions	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 for Containment and Clean Up	Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

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.
Storage.	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. Incompatible Materials. Strong oxidizing agents. Metals.

8. Exposure controls / personal protection

Exposure Guidelines

Component	Alberta	British Columbia	Ontario TWAEV	Quebec	ACGIH TLV	OSHA PEL	NIOSH IDLH
Copper(2+) chloride dihydrate					TWA: 1 mg/m³		IDLH: 100 mg/m³ TWA: 1 mg/m³
Copper chloride (CuCl2)					TWA: 1 mg/m³		IDLH: 100 mg/m³ TWA: 1 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

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

Glove material	Breakthrough time	Glove thickness	Glove comments
Natural rubber Nitrile rubber Neoprene PVC	See manufacturers recommendations	-	Splash protection only

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) 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. gloves with care avoiding skin contamination.

Respiratory Protection
No protective equipment is needed under normal use conditions.

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.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

9. Physical and chemical properties

Physical State	Solid
Appearance	Blue green
Odor	Odorless
Odor Threshold	No information available
pH	3.0-3.8
Melting Point/Range	598 °C / 1108.4 °F
Boiling Point/Range	993 °C / 1819.4 °F
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	Not flammable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Specific Gravity	2.54 (H2O=1)
Bulk Density	1.07 kg/m^3
Solubility	1150 g/L @ 20 °C

Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	110 °C
Viscosity	Not applicable
Molecular Formula	Cl2 Cu . 2 H2 O
Molecular Weight	170.48

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Hygroscopic.

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

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Copper chloride (CuCl2)	584 mg/kg (Rat)	1224 mg/kg (Rat)	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes, respiratory system and skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Copper(2+) chloride dihydrate	10125-13-0	Not listed	Not listed	Not listed	Not listed	Not listed
Copper chloride (CuCl2)	7447-39-4	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

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

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

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 Algae	Freshwater Fish	Microtox	Water Flea
Copper(2+) chloride dihydrate	Not listed	Not listed	= 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++	Not listed
Copper chloride (CuCl2)	EC50: 0.12 - 0.2 mg/L/96h	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)	Not listed	EC50: 0.04 mg/L/48h

Persistence and Degradability May persist based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

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

TDG

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

IATA

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

IMDG/IMO

UN-No UN2802
Proper Shipping Name COPPER CHLORIDE

Hazard Class 8
Packing Group III

15. Regulatory information

International Inventories

Component	CAS-No	DSL	NDSL	TSCA	TSCA Inventory notification - Active-Inactive	EINECS	ELINCS	NLP
Copper(2+) chloride dihydrate	10125-13-0	-	-	-	-	-	-	-
Copper chloride (CuCl2)	7447-39-4	X	-	X	ACTIVE	231-210-2	-	-

Component	CAS-No	IECSC	KECL	ENCS	ISHL	TCSI	AICS	NZIoC	PICCS
Copper(2+) chloride dihydrate	10125-13-0	X	-	-	-	X	X	X	X
Copper chloride (CuCl2)	7447-39-4	X	KE-08923	X	X	X	X	X	X

Legend:
X - Listed '-' - Not Listed
KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

Component	Canada - National Pollutant Release Inventory (NPRI)	Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances	Canada's Chemicals Management Plan (CEPA)
Copper(2+) chloride dihydrate	Part 1, Group A Substance		
Copper chloride (CuCl2)	Part 1, Group A Substance		

Other International Regulations

Authorisation/Restrictions according to EU REACH

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

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Copper(2+) chloride dihydrate	10125-13-0	Not applicable	Not applicable	Not applicable	Not applicable
Copper chloride (CuCl2)	7447-39-4	Listed	Not applicable	Not applicable	Not applicable

Component	CAS-No	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(2+) chloride dihydrate	10125-13-0	Not applicable	Not applicable	Not applicable	Annex I - Y22
Copper chloride (CuCl2)	7447-39-4	Not applicable	Not applicable	Not applicable	Annex I - Y22

16. Other information

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
Creation Date	28-November-2010
Revision Date	24-December-2021
Print Date	24-December-2021
Revision Summary	This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

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 SDS