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1. IDENTIFICATION

Product name: Copper dinitrate
CAS No. : 3251-23-8
Brand: Macklin
Company: Shanghai Macklin Biochemical Co.,Ltd.
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Revision date: 2019/12/12

2. HAZARDS IDENTIFICATION

GHS classification

PHYSICAL HAZARDS

HEALTH HAZARDS

ENVIRONMENTAL HAZARDS

GHS label elements, including precautionary statements

Pictograms or hazard symbols

Signal word

Danger

Hazard statements

H272 May intensify fire; oxidizer
H314 Causes severe skin burns and eye damage
H400 Very toxic to aquatic life
H411 Toxic to aquatic life with long lasting effects

Precautionary statements

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name
Copper dinitrate

Components:Copper dinitrate
CAS No.:3251-23-8
Chemical Formula:$Cu(NO_3)_2$

4. FIRST AID MEASURES

4.1
Description of necessary first-aid measures
If inhaled
Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.
Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2

Most important symptoms/effects, acute and delayed

Inhalation causes irritation of throat and lungs. Ingestion of large amounts causes violent vomiting and purging, intense pain, collapse, coma, convulsions, and paralysis. Solutions irritate eyes; contact with solid causes severe eye surface injury and skin irritation. (USCG, 1999)

4.3

Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for shock and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Copper and related compounds

5. FIRE-FIGHTING MEASURES

5.1

Suitable extinguishing media

Evacuation: If fire becomes uncontrollable consider evacuation of one-half (1/2) mile radius. Cupric nitrate; Cupric nitrate solution

5.2

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic and irritating oxides of nitrogen may form in fire. Behavior in Fire: Can increase intensity of fire if in contact with combustible material. (USCG, 1999)

5.3

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

6.1

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours.Avoid contacting with skin and eye. Use personal protective equipment.Wear chemical impermeable gloves. Ensure adequate ventilation.Remove all sources of ignition. Evacuate personnel to safe areas.Keep people away from and upwind of spill/leak.

6.2

Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

6.3

Methods and materials for containment and cleaning up

Environmental consideration--land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. /SRP: If time permits, pits, ponds, lagoons, soak holes, or holding areas should be sealed with an impermeable flexible membrane liner./ Cover solids with a plastic sheet to prevent dissolving in rain or fire fighting water.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Keep well closed. cupric nitrate, hexahydrate

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure limit values
Component
Copper dinitrate
CAS No.
3251-23-8
Limit value - Eight hours
Limit value - Short term
ppm
mg/m
3
ppm
mg/m
3
Finland
1 (1)
Remarks
Finland
(1) calculated as Cu
Biological limit values
no data available
Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Personal protective equipment

Eye/face protection
Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).
Skin protection
Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. 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.
Respiratory protection
If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.
Thermal hazards
no data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state
Solid. Crystalline.
Colour
Blue with a Munsell colour value of 2.5 PB 5/10.
Odour
no data available
Melting point/freezing point
255 °C.
Boiling point or initial boiling point and boiling range
83ºC at 760 mmHg
Flammability
no data available
Lower and upper explosion limit/flammability limit
no data available
Flash point
no data available
Auto-ignition temperature
no data available

Decomposition temperature
no data available
pH
no data available
Kinematic viscosity
no data available
Solubility
Sol in water, ethyl acetate, dioxane
Partition coefficient n-octanol/water
no data available
Vapour pressure
0 Pa. Temperature:25 °C.
Density and/or relative density
2.39. Temperature:20 °C.
Relative vapour density
no data available
Particle characteristics
no data available

10. STABILITY AND REACTIVITY

10.1
Reactivity
Deliquescent. Water soluble.
10.2
Chemical stability
no data available
10.3
Possibility of hazardous reactions
It is noncombustible.Mixtures of CUPRIC NITRATE with alkyl esters may explode, owing to the formation of alkyl nitrates. Mixtures with phosphorus, tin(II) chloride or other reducing agents may react explosively [Bretherick, 1979 p. 108-109]. A finely divided mixture of potassium ferrocyanide and cupric nitrate exploded when dried at 220° C [Chem. Abst. 77:1343 (1972)]. Noncombustible, but it will accelerate the burning of combustible materials. If large quantities of the material are involved in a fire or the material is finely divided, an explosion may result. Prolonged exposure to fire or heat may result in an explosion.
10.4
Conditions to avoid
no data available
10.5
Incompatible materials
Reacts vigorously with ether
10.6
Hazardous decomposition products
no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral: no data available
Inhalation: no data available
Dermal: no data available
Skin corrosion/irritation
no data available
Serious eye damage/irritation
no data available
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available

Carcinogenicity
no data available
Reproductive toxicity
no data available
STOT-single exposure
no data available
STOT-repeated exposure
no data available
Aspiration hazard
no data available

12. ECOLOGICAL INFORMATION

12.1
Toxicity
Toxicity to fish: LC50 - Pimephales promelas - 193 □g/L - 96 h.
Toxicity to daphnia and other aquatic invertebrates: These observations consistently show that the presence of organic matter decreases the bioavailability, uptake, and ecotoxicity of copper in the aquatic environment - Daphnia magna.
Toxicity to algae: Based on the algal biomass, the growth rate, the pigment diversity and the autotrophic index, an optimal concentration range was observed between 1 and 35 □g Cu/L. - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum).
Toxicity to microorganisms: see summary - activated sludge of a predominantly domestic sewage.
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
Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

Product
The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.
Contaminated packaging
Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. TRANSPORT INFORMATION

14.1
UN Number
ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)
14.2
UN Proper Shipping Name
ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)
14.3

Transport hazard class(es)
ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)
14.4
Packing group, if applicable
ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)
14.5
Environmental hazards
ADR/RID: No
IMDG: No
IATA: No
14.6
Special precautions for user
no data available
14.7
Transport in bulk according to IMO instruments
no data available

15. REGULATORY INFORMATION

15.1
Safety, health and environmental regulations specific for the product in question
Chemical name
Common names and synonyms
CAS number
EC number
Copper dinitrate
Copper dinitrate
3251-23-8
221-838-5
European Inventory of Existing Commercial Chemical Substances (EINECS)
Listed.
EC Inventory
Listed.
United States Toxic Substances Control Act (TSCA) Inventory
Listed.
China Catalog of Hazardous chemicals 2015
Not Listed.
New Zealand Inventory of Chemicals (NZIoC)
Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)
Listed.
Vietnam National Chemical Inventory
Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)
Listed.
Korea Existing Chemicals List (KECL)
Listed.

16. OTHER INFORMATION

This SDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority.The products are supposed to be used promptly after purchase in

consideration of safety.Some new information or amendments may be added afterwards.If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only.In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal.Safe usage conditions shall be set up on each user's own responsibility.