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Safety Data Sheet

1. Chemical product and company identification

Product name : Copper, cube, 5N5

Company information

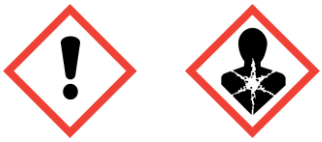
Name of manufacturer	:	KANTO CHEMICAL CO., INC.
Address	:	2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
Name of section	:	Business Administration Department, Reagent Division
Telephone number	:	+81-3-6214-1090
Facsimile number	:	+81-3-3241-1047
Mail address	:	BC32@kanto.co.jp
Reference No	:	08348
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	Skin sensitization	Category 1A
	Specific target organ toxicity (single exposure)	Category 1 (digestive organs)
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)

Hazard pictograms



Signal word : Danger

Hazard statements : May cause an allergic skin reaction
May cause respiratory irritation
Causes damage to organs (digestive organs)

Precautionary statements

Prevention :
Do not breathe dust.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.

Response :
IF ON SKIN: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Call a POISON CENTER or doctor.
Call a POISON CENTER or doctor if you feel unwell.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.

Storage	:	Store in a well-ventilated place. Keep container tightly closed. 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	≥ 99.99	Cu	Listed	231-159-6	7440-50-8

＊Concentration : ≧99.9995%.

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.
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
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 response)	:	Firefighters should wear protective equipment.

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 damage to the environment by flowing of spillage to rivers.

Methods and Equipment for Containment and Cleaning up

For containment	:	Sweep up the chemical and place in a chemical waste container.

7. Handling and storage

Handling

Technical measures	:	Wear appropriate protective equipment to avoid contact with skin or inhalation of dust.
Precautions for safe handling	:	Avoid formation of dust and aerosols.

Storage

Storage conditions	:	Store in a dark, cool place and tightly closed.
Material used in packaging/containers	:	Glass, polyethylene, polypropylene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	0.2 mg/m³ (Fume), 1mg/m³ (Dust)

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	:	Reddish gold
Odor	:	Odorless
pH	:	No data available
Melting point	:	1083 ° C
Freezing point	:	No data available
Boiling point	:	2582 ° C
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability	:	Non flammable.
Vapor pressure	:	No data available
Relative density	:	8.92 (20℃)
Density	:	No data available
Relative gas density	:	No data available
Solubility	:	Water: Insoluble.
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	:	In moist air containing carbon dioxide, sulfur dioxide or salts, basic carbonates and the like are produced on the surface. When heated in air, it produces copper(II) oxide at temperatures below 1000℃ and copper(I) oxide at temperatures above 1000℃.
Chemical stability	:	Stable under normal conditions. Oxidized gradually in air.
Possibility of hazardous reactions	:	Mixtures of finely ground copper and chlorates or iodine salts can explode due to friction, impact and heating.
Conditions to avoid	:	Light, heat.
Incompatible materials	:	Oxidizing substances.
Hazardous decomposition products	:	Copper oxides.

11. Toxicological information

Acute toxicity (oral)	:	Classification not possible
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) No classification (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	Classification not possible In addition, there is a description that "although there are reports of contact dermatitis related to copper, it is a small number of cases caused in the copper metal or copper compound industry."
Serious eye damage/irritation	:	Classification not possible
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	May cause an allergic skin reaction Since copper and its compounds are classified to be skin sensitization group 2 according to Japan Society for Occupational Health, it was classified into category 1A.
Germ cell mutagenicity	:	Classification not possible
Carcinogenicity	:	No classification It was classified into group Ⅰ (not classifiable as a human carcinogen) by EPA.
Reproductive toxicity	:	Classification not possible
STOT-single exposure	:	Causes damage to organs (digestive organs) May cause respiratory irritation From knowledge of human, respiratory inhalation route (respiratory tract irritation) is the main acute toxicity symptoms. When ingested drinking water including a large amount of copper in oral exposure, gastrointestinal symptoms (nausea, vomiting, abdominal pain, etc.) is observed, and there is description that causes nausea, vomiting are main symptoms as main symptoms in many reports. It was classified into category 1(digestive organs), and category 3 (respiratory tract irritation).
STOT-repeated exposure	:	Classification not possible It has been reported that repeated oral exposure to copper in humans caused gastrointestinal symptoms (nausea, vomiting, abdominal pain, etc.) and liver damage (liver dysfunction, cirrhosis). Since gastrointestinal symptoms include nausea, vomiting, and abdominal pain, we do not support the classification of target organs. In addition, regarding liver damage, only one case was reported, and it was judged that it could not be generalized.
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Classification not possible
Aquatic chronic	:	Classification not possible

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	:	Solidification method : Solidify with cement and bury in a landfill site approved for hazardous waste disposal. Or entrust approved waste disposal companies with the disposal.
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)	:	Not applicable
Proper Shipping Name (IMDG)	:	Not applicable
Packing group (IMDG)	:	Not applicable
Transport hazard class(es) (IMDG)	:	Not applicable

Air transport(IATA)

UN-No. (IATA)	:	Not applicable
Proper Shipping Name (IATA)	:	Not applicable
Packing group (IATA)	:	Not applicable
Transport hazard class(es) (IATA)	:	Not applicable
Marine pollutant	:	Not applicable

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 dangeroous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001) . 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.