Issue date: 7/10/2003
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Safety Data Sheet

1. Chemical product and company identification

Product name	:	Copper(Ⅱ) oxide, powder

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	:	07503
Product numbers applied by the SDS	:	07503, 07504
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 1
	Specific target organ toxicity (single exposure)	Category 1 (systemic toxicity)
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)
Environmental hazards	Aquatic acute	Category 1
	Aquatic chronic	Category 1

Hazard pictograms

Signal word : Danger

Hazard statements :
May cause an allergic skin reaction
May cause respiratory irritation
Causes damage to organs (systemic toxicity)
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects

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.
Avoid release to the environment.
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.
Collect spillage.

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(Ⅱ) oxide	≥ 95	CuO	Listed	215-269-1	1317-38-0

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.

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 in a chemical waste container. Flush contaminated area with copious amounts of water.

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	Not established

Appropriate engineering controls	:	Use with an enclosed system or a local exhaust ventilation.

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	:	Black.
Odor	:	Odorless
pH	:	No data available
Melting point	:	1026 ° C (Partially decomposed to produce copper oxide (I))
Freezing point	:	No data available
Boiling point	:	No data available
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	:	6.315 (14/4℃)

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	:	Has oxidizing properties.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Reacts violently with hydroxylamine or hydrazine.
Conditions to avoid	:	Light, heat.
Incompatible materials	:	Reducing substances.
Hazardous decomposition products	:	fume.

11. Toxicological information

Acute toxicity (oral)	:	No classification rat LD50>2000mg/kg
Acute toxicity (dermal)	:	No classification rat LD50>2000mg/kg
Acute toxicity (inhalation)	:	No classification (gas) No classification (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	No classification Mild irritation (PI Index 1.49) was observed in a rabbit skin irritation test. Also, it is reported that in a skin irritation test (OECD TG 404) using rabbits, it is not irritating.
Serious eye damage/irritation	:	Classification not possible
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	May cause an allergic skin reaction According to the Recommendation of Occupational Exposure Limits (Japan Society For Occupational Health), copper and copper compounds are designated as group 2 of occupational skin sensitizer, so this substance was classified into category 1.
Germ cell mutagenicity	:	Classification not possible
Carcinogenicity	:	Classification not possible
Reproductive toxicity	:	Classification not possible
STOT-single exposure	:	Causes damage to organs (systemic toxicity) May cause respiratory irritation It is described that, in humans, inhalation of fine dust particles of this substance can result in sneezing, coughing, digestive disorders and fever. It is also reported that metal fume fever accompanied with high fever, shivering, headaches, dryness in the mouth and throat, dysgeusia, nausea, shortness of breath, and myalgia occurred by acute inhalation exposure to copper fumes during the process of welding copper. From the above, this substance was classified into category 1 (systemic toxicity), and in category 3 (respiratory tract irritation).

STOT-repeated exposure	:	Classification not possible Additionally, in humans, according to health examination records of workers who engaged in the grinding and sieving processes of high purity copper at a copper smelting plant, 39 to 70% of the workers showed hepatomegaly, 10 to 15 % showed digestive disorders and 16% showed sexual impotence. It was reported that the copper concentration in the workplace ranged from 464 mg/m3 to 111 mg/m3. Using normal levels (0.8 - 1.2 mg/L) based on serum levels of copper (0.76-1.17 mg/L) in unexposed workers, it is reported that a rate of workers whose levels exceeded the normal ones increased from 40% to 92%. However, it is described that since there is neither control group nor the description on methods for measuring exposure concentration, severely limit the usefulness. Also as for experimental animals, although details are unknown, it was reported in a Russian report that, in a study using male rats exposed to copper oxide aerosol by inhalation for 90 to 100 days, decreases in hemoglobin concentration and serum protein concentration, testicular relative weight, sperm motility rate, and sperm viability were observed in the groups of 0.01 mg/m3 or above, and significant increases in red blood cell count were observed in the groups of 0.1 mg/m3 or above.
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Very toxic to aquatic life Pseudokirchneriella subcapitata LC50=3.1ppb
Aquatic chronic	:	Very toxic to aquatic life with long lasting effects Pseudokirchneriella subcapitata NOEC=0.2ppb

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	:	Bury in a landfill site approved for the disposal of chemical and hazardous wastes. 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)	:	3077

Proper Shipping Name (IMDG)	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Packing group (IMDG)	:	III
Transport hazard class(es) (IMDG)	:	9

Air transport(IATA)

UN-No. (IATA)	:	3077
Proper Shipping Name (IATA)	:	Environmentally hazardous substance, solid, n.o.s.
Packing group (IATA)	:	III
Transport hazard class(es) (IATA)	:	9
Marine pollutant	:	Applicable
MFAG-No	:	171

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) .
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.