
Safety Data Sheet**1. Chemical product and company identification****Product name** : Copper(II) oxide (Powder)**SDS code** : E3-19**Company/undertaking identification** :

HAYASHI PURE CHEMICAL IND.,LTD.

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URL : <https://www.hpc-j.co.jp/>**Emergency number** : 06-6910-7305**Recommended use** : For research and experimental use only.**Restrictions on use** : Do not use on a human body or for animal medicines, foods, household products, cosmetics, etc.**2. Hazards identification****GHS classification**

Physical hazards	Explosives	No classification	
	Flammable gases	No classification	
	Aerosol	No classification	
	Oxidizing gases	No classification	
	Gases under pressure	No classification	
	Flammable liquids	No classification	
	Flammable solids	No classification	
	Self-reactive substances and mixtures	No classification	
	Pyrophoric liquids	No classification	
	Pyrophoric solids	No classification	
	Self-heating substances and mixtures	No classification	
	Substances and mixtures which in contact with water emit flammable gases	No classification	
	Oxidizing liquids	No classification	
	Oxidizing solids	classification not possible	
	Organic peroxides	No classification	
	Corrosive to metals	classification not possible	
	Desensitized explosives	classification not possible	
	Health hazards	Acute toxicity (oral)	No classification
		Acute toxicity (dermal)	No classification
Acute toxicity (inhalation:gas)		No classification	
Acute toxicity (inhalation:vapors)		No classification	
Acute toxicity (inhalation:dust/mist)		classification not possible	
Skin corrosion/irritation		No classification	
Serious eye damage/eye irritation		classification not possible	
Respiratory sensitization		classification not possible	
Skin sensitization		Category 1	
Germ cell mutagenicity		classification not possible	
Carcinogenicity	classification not possible		
Reproductive toxicity	classification not possible		
Specific target organ toxicity (single exposure)	Category 1 (systemic toxicity)		

	Specific target organ toxicity (single exposure)	Category 3 (Respiratory tract irritation.)
	Specific target organ toxicity (repeated exposure)	classification not possible
	Aspiration hazard	classification not possible
Environmental hazards	Hazardous to the aquatic environment, short-term (acute)	Category 1
	Hazardous to the aquatic environment, long-term (chronic)	Category 1
	Hazardous to the ozone layer	classification not possible

Hazard pictograms (GHS JP)



GHS07



GHS08



GHS09

Signal word (GHS JP)	:	Danger
Hazard statements (GHS JP)	:	May cause an allergic skin reaction (H317) May cause respiratory irritation (H335) Causes damage to organs (systemic toxicity) (H370) Very toxic to aquatic life with long lasting effects (H410)
Precautionary statements (GHS JP)	:	
Prevention	:	Do not breathe dust/fume/gas/mist/vapors/spray. (P260) Wash hands, forearms and face thoroughly after handling. (P264) Do not eat, drink or smoke when using this product. (P270) Use only outdoors or in a well-ventilated area. (P271) Contaminated work clothing should not be allowed out of the workplace. (P272) Avoid release to the environment. (P273) Wear protective gloves/protective clothing/eye protection/face protection. (P280)
Response	:	IF ON SKIN: Wash with plenty of water. (P302+P352) IF INHALED: Remove person to fresh air and keep comfortable for breathing (P304+P340) IF exposed or concerned: Call a POISON CENTER or doctor. (P308+P311) Call a POISON CENTER or doctor if you feel unwell. (P312) If skin irritation or rash occurs: Get medical advice/attention. (P333+P313) Take off contaminated clothing and wash it before reuse. (P362+P364) Collect spillage. (P391)
Storage	:	Store in a well-ventilated place. Keep container tightly closed. (P403+P233) Store locked up. (P405)
Disposal	:	Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501)

3. Composition/information on ingredients

Distinction of substance or mixture	:	Substance
Synonyms	:	Cupric oxide

Name	Concentration or Concentration range	Formula	Kanpo number		CAS RN
			CSCL no	ISHL no	
Copper(II) oxide	≥98.0%, ≤100%	CuO	(1)-297	Existing Chemical Substance	1317-38-0

The above concentration or concentration range are not product specification.
All percentages listed in the above concentration or concentration range are wt%, unless otherwise specified.

4. First aid measures

First aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
Get immediate medical advice/attention.
- First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing.
Gently wash with plenty of soap and water.
Get immediate medical advice/attention.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get immediate medical advice/attention.
- First-aid measures after ingestion : Rinse mouth.
Get immediate medical advice/attention.

5. Fire fighting measures

- Suitable extinguishing media : Water spray, Foam, Dry powder, Carbon dioxide, Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.
- Fire hazard : This product is unburnable.
- Explosion hazard : May induce explosion of containers by heating.
- Hazardous decomposition products in case of fire : In case of fire, product may produce irritative or toxic fumes/gases.
- Firefighting instructions : If ignited, for the initial fire-fighting, cut off combustion sources, extinguish fire at a stroke using appropriate fire-extinguishers.
In the case of peripheral fire, quickly remove movable containers to safe places.
If unable to be moved containers, sprinkle water to containers and surrounding equipment, etc. to cool.
Avoid (reject) fire-fighting water to enter environment.
Even after extinguishing fire, thoroughly cool containers by using plenty of water.
- Protection during firefighting : Wear appropriate fire-resistant clothing including self contained-compressed air breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

- General measures : Before entering, ventilate the area.
Do not let unauthorized persons come close to the area.
Immediately place the leakage area in isolation, with taking proper distances for all directions.
Wear appropriate personal protective devices to prevent inhalation and contact with eye, skin, and clothing, and never attempt to work on the lee.

Environmental precautions

- Environmental precautions : Avoid release to the environment.
Prevent entry to sewers and public waters.

Methods and Equipment for Containment and Cleaning up

- Methods for cleaning up : Take care not to generate dust, sweep it up as much as possible, collect it in an empty container that can be sealed, and move it to a safe place.
Wash out the spilled area with large amounts of water.

7. Handling and storage

Handling

- Technical measures : Work with appropriate personal protective equipment to prevent inhalation or contact to eyes, skin, and clothing.
Handle with care to prevent leakage, overflowing, or scattering, minimize generation of mist or vapor, and thoroughly ventilate.

Precautions for safe handling : Do not eat, drink or smoke when using this product.
Thoroughly wash your hands and gargle after handling.
Ensure good ventilation of the work station.
Do not contact, breathe or swallow.

Prevents handling of incompatible substances or mixtures : Avoid prolonged or repeated exposure.

Storage

Storage conditions : Store locked up.
Store in a well-ventilated place, away from direct sunlight. Keep container tightly closed and keep away from fire and heat sources.

Material used in packaging/containers : Airtight container.

Technical measures : Comply with applicable regulations.

Storage temperature : Cool and dark place

8. Exposure controls / Personal protection equipment

Appropriate engineering controls : Cover up tightly the generation source at the handling place or install local exhaust equipment or overall ventilation equipment. Install safety showers and eye-fountains near a handling place. Clearly indicate the location.

Protective equipment

Respiratory protection : Dustproof mask

Hand protection : Protective gloves

Eye protection : Protective glasses (general glasses, glasses with side-shields, goggles)

Skin and body protection : Protective clothing, Protective boots, Protective apron

9. Physical and chemical properties

Physical state : Solid

Appearance : Powder

Color : black

Odor : Odorless

pH : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : 1050 °C

Flammability (solid, gas) : No data available

Vapor pressure : No data available

Relative density : No data available

Density : 6.32 g/cm³ (20°C)

Relative gas density : No data available

Solubility : Insoluble in water. Insoluble in ethanol. Soluble in acids. Soluble in ammonia solution. Soluble in ammonium chloride solution.

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 : No data available

Chemical stability : Stable under normal handling conditions.

Possibility of hazardous reactions : When heated to 1050°C or higher, it becomes copper(I) oxide. Reacts with reducing agents, aluminium, alkali metals and metal powder.

Conditions to avoid	:	Sunlight, heat. Contact with reducing agents, aluminium, alkali metals and metal powder.
Incompatible materials	:	Reducing agents, Aluminium, Alkali metals, Metal powder
Hazardous decomposition products	:	Copper(I) oxide

11. Toxicological information

The information in this section is based on the "GHS Classification Results" by NITE.

Copper(II) oxide	
Acute toxicity (oral)	No classification
Acute toxicity (dermal)	No classification
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	No classification
Acute toxicity (inhalation:dust/mist)	classification not possible
Skin corrosion/irritation	No classification
Serious eye damage/irritation	classification not possible
Respiratory sensitization	classification not possible
Skin sensitization	Category 1A
Germ cell mutagenicity	classification not possible
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	Category 1 Category 3 (Respiratory tract irritation.)
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible

12. Ecological information

The information in this section is based on the "GHS Classification Results" by NITE.

Copper(II) oxide	
Hazardous to Aquatic Environment - Acute Hazard	Category 1
Hazardous to Aquatic Environment - Chronic Hazard	Category 1
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Hazardous to the ozone layer	classification not possible

13. Disposal considerations

Ecology - waste materials	:	With the detail information of the waste, subcontract its disposal to a waste disposer authorized by a Prefectural Governor.
Contaminated container and packaging	:	Empty the packaging completely prior to disposal. Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.

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
Hazard labels (IMDG)	:	9
Class (IMDG)	:	9
Special provision (IMDG)	:	274, 335, 966, 967, 969
Limited quantities (IMDG)	:	5 kg
Excepted quantities (IMDG)	:	E1

Packing instructions (IMDG) : LP02, P002
 Packing provisions (IMDG) : PP12
 IBC packing instructions (IMDG) : IBC08
 IBC special provisions (IMDG) : B3
 Tank instructions (IMDG) : BK1, BK2, BK3, T1
 Tank special provisions (IMDG) : TP33
 Stowage category (IMDG) : A
 MFAG-No : 171

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
 Hazard labels (IATA) : 9
 Class (IATA) : 9
 PCA Excepted quantities (IATA) : E1
 PCA Limited quantities (IATA) : Y956
 PCA limited quantity max net quantity (IATA) : 30kgG
 PCA packing instructions (IATA) : 956
 PCA max net quantity (IATA) : 400kg
 CAO packing instructions (IATA) : 956
 CAO max net quantity (IATA) : 400kg
 Special provision (IATA) : A97, A158, A179, A197
 ERG code (IATA) : 9L

Marine pollutant : Applicable

Regulations in Japan

Regulatory information by sea : Conform to the provisions of the Ship Safety Law.
 Regulatory information by air : Conform to the provisions of the Civil Aeronautics Law.
 MFAG-No : 171

Special transport precautions : When transporting, load containers so that they do not tip over, damage, drop or collapse. Make sure there is no leak in containers.

15. Regulatory information**National law**

Industrial Safety and Health Law : Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18 Item 1, Item 2, Attached Table No.9)
 Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Item 1, Item 2, Attached Table No.9)
 Copper and its compounds (Ordinance number : 379)

Japanese Poisonous and Deleterious Substances Control Law : Not applicable

Water Pollution Prevention Law : Designated Chemical Substances (Law Article 2, Paragraph 4, Enforcement Order Article 3-3)

Fire Service Law : Not applicable

Air Pollution Control Law : Hazardous Air Pollutants (Central Environment Council Report No. 9)

Foreign Exchange and Foreign Trade Control Act : Export Trade Control Ordinance appendix 1-16

Ship Safety Act : Miscellaneous dangerous substances & articles (Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations)

Civil Aeronautics Law : Miscellaneous dangerous substances & articles (Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)

Waterworks Law : Hazardous Substances (Act Article 4 paragraph 2), Standard for Water Quality (Ministry Order No.101 of 2003)

Sewerage Law : Substances for Water Quality Standard (Act Art.12-2 Para.2, Enforcement Order Art.9-4)

Japanese Pollutant Release and Transfer Register Law (PRTR Law) : Not applicable

16. Other information

- Data sources : Handbook of 17423 Chemical Products, The Chemical Daily Co, Ltd.
International Chemical Safety Cards.
National Institute of Technology and Evaluation (NITE).
2020 Emergency Response Guidebook (ERG 2020).
- Other information : The SDS is copyrighted material of Hayashi Pure Chemical Ind, Ltd.
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