



Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: Hopcalite(I) 0.7-1.7mm (10-24mesh)

SDS No. : Q3735E-2

Relevant identified uses of the substance or mixture and uses advised against

Research and Development

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Chemical Safety Management Department

Telephone number: +81-6-6946-8061

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e-mail address: kagakuhinanzenkanri@kishida.co.jp

2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Skin corrosion/irritation: Category 1

Skin sensitization: Category 1

Germ cell mutagenicity: Category 2

Specific target organ toxicity – single exposure: Category 1(respiratory system, systemic toxicity)

Specific target organ toxicity – single exposure: Category 2(respiratory tract irritation)

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – repeated exposure: Category 1(nervous system,respiratory system)

Specific target organ toxicity – repeated exposure: Category 2(skin, respiratory apparatus)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 1

Hazardous to the aquatic environment (Long-term): Category 1

Label elements



Signal word: Danger

HAZARD STATEMENT

Causes severe skin burns and eye damage

May cause an allergic skin reaction

Suspected of causing genetic defects

Causes damage to organs(respiratory system, systemic toxicity)

May cause damage to organs(respiratory tract irritation)

May cause respiratory irritation

Causes damage to organs through prolonged or repeated exposure(nervous system,respiratory system)

May cause damage to organs through prolonged or repeated exposure(skin, respiratory apparatus)



Very toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

- Avoid release to the environment.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Wash contaminated parts thoroughly after handling.
- Contaminated work clothing should not be allowed out of the workplace.
- Wear protective gloves, protective clothing or face protection.
- Do not eat, drink or smoke when using this product.

Response

- Collect spillage.
- Get medical advice/attention if you feel unwell.
- IF exposed or concerned: Get medical advice/attention.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- IF ON SKIN: Wash with plenty of soap and water.
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- If skin irritation or rash occurs: Get medical advice/attention.
- Wash contaminated clothing before reuse.
- Take off contaminated clothing and wash it before reuse.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

- Store in a well-ventilated place. Keep container tightly closed.

Disposal

- Dispose of contents/container in accordance with local/national regulation.

3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:Manganese(IV) oxide

Content (%):50

Chemical formula:MnO₂

Chemicals No, Japan:1-475

CAS No.:1313-13-9

MW:86.94

Ingredient name:Copper(II)oxide

Content (%):30

Chemical formula:CuO

Chemicals No, Japan:1-297

CAS No.:1317-38-0

MW:79.55

ECNO:215-269-1

Ingredient name:Cobalt (III) oxide

Content (%):15

Chemical formula:Co₂O₃

Chemicals No, Japan:1-267

CAS No.:1308-04-9

MW:165.86



Ingredient name:Silver(I)oxide

Content (%):5.0

Chemical formula:Ag₂O

Chemicals No, Japan:1–9

CAS No.:20667–12–3

MW:231.74

ECNO:243–957–1

Note : The figures shown above are not the specifications of the product.

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth. Do NOT induce vomiting.

Call a POISON CENTER/doctor/physician if you feel unwell.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.



6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Avoid raising dust.

Methods and materials for containment and cleaning up

Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident

Collect spillage.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing or face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing should not be allowed out of the workplace.

Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Container and packaging materials for safe handling

Glass

Polyethylene

8. Exposure controls/personal protection

Control parameters

Adopted value

(Manganese(IV) oxide)

ACGIH(2013) TWA: 0.02mg-Mn/m³(R);

TWA: 0.1mg-Mn/m³(I) (CNS impair)

(Cobalt (III) oxide)



ACGIH(2019) TWA: 0.02mg–Co/m³(I) (Pulm func changes)

Notation

(Cobalt (III) oxide)

DSEN; RSEN

OSHA–PEL

(Manganese(IV) oxide)

STEL: C 5mg–Mn/m³

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Individual protection measures

Respiratory protection

Wear respiratory protection.

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Powder or granular

Color: Black

Odor: None

Melting point/Freezing point data is not available.

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Insoluble

n–Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Density and/or relative density data is not available.

Relative vapor density (Air=1) data is not available.

Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(Manganese(IV) oxide)

Decomposes above 553° C . This produces manganese(III)oxide and oxygen, which increases fire hazard. The substance is a strong oxidant. It reacts violently with combustible and



reducing materials. This generates fire and explosion hazard. Reacts with aluminium on heating. (ICSC 0175)

(Cobalt (III) oxide)

Reacts violently with hydrogen peroxide. Reacts with reducing agents. (ICSC 0785)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Reducing agents, Combustible materials, Aluminium, Hydrogen peroxide

Hazardous decomposition products

Manganese(III)oxide

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Copper(II)oxide)

rat LD50>2000mg/kg (SIAP, 2014)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

(Copper(II)oxide)

rat LD50>2000mg/kg (SIAP, 2014)

Irritant properties

Skin corrosion/irritation

[Company proprietary data]

(Silver(I)oxide)

Category 1

Serious eye damage/irritation

[Company proprietary data]

(Silver(I)oxide)

Category 2B

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]

(Copper(II)oxide)

cat. 1A; JSOH, 2016

Germ cell mutagenicity

[GHS Cat. Japan, base data]

(Manganese(IV) oxide)

cat. 2; mouse : SIDS, 2012

Carcinogenicity

[IARC]

(Cobalt (III) oxide)

Group 2B : Possibly carcinogenic to humans

[ACGIH]

(Manganese(IV) oxide)

A4(as Mn)(2013) : Not Classifiable as a Human Carcinogen

(Cobalt (III) oxide)

A3(as Co)(2019) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

Reproductive toxicity data is not available.

STOT

STOT–single exposure



[cat.1]

[GHS Cat. Japan, base data]
(Manganese(IV) oxide)
respiratory system (CICAD 12, 1999)
(Copper(II)oxide)
systemic toxicity (DFGOT vol. 22, 2004 et al.)
[Company proprietary data]
(Silver(I)oxide)
respiratory system

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]
(Copper(II)oxide)
respiratory tract irritation (DFGOT vol. 22, 2004)

STOT–repeated exposure

[cat.1]

[GHS Cat. Japan, base data]
(Manganese(IV) oxide)
nervous system,respiratory system (ATSDR, 2012)
[Company proprietary data]
(Silver(I)oxide)
skin, respiratory apparatus

Aspiration hazard data is not available.

Information on other hazards

May cause lung disorders by massive inhalation of powdered substance.
–e.g. fibrosis of lung tissue, cough, sputum, breath shortness, dyspnea, decline of lung function, interstitial lung disease, pneumothorax

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Very toxic to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]
(Manganese(IV) oxide)
Algae (*Pseudokirchneriella subcapitata*) ErC50 > 100mg/L/72hr (SIDS, 2012)
(Copper(II)oxide)
Algae (*Pseudokirchneriella subcapitata*) LC50=3.1 ppb (US EPA: RED, 2009)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]
(Copper(II)oxide)
Algae (*Pseudokirchneriella subcapitata*) NOEC=0.2 ppb (US EPA: RED, 2009)

Water solubility

(Manganese(IV) oxide)
none (ICSC, 2003)
(Cobalt (III) oxide)
insoluble (ICSC, 2004)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

Bioaccumulative potential data is not available.

Mobility in soil

Mobility in soil data is not available.

Other adverse effects



Ozone depleting chemical data is not available.

13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment.

Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

UN No. or ID No.: 1759

UN Proper Shipping Name :

CORROSIVE SOLID, N.O.S.

Class or division (Transport hazard class) : 8

Packing group : III

ERG GUIDE No.: 154

Special provisions No.: 223; 274

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1759

Proper Shipping Name :

CORROSIVE SOLID, N.O.S.

Class or division : 8

Packing group : III

Special provisions No.: 223; 274

IATA Dangerous Goods Regulations

UN No.: 1759

Proper Shipping Name :

CORROSIVE SOLID, N.O.S.

Class or division : 8

Hazard labels : Corrosive

Packing group : III

Special provisions No.: A3; A803

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : yes

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

Manganese(IV) oxide

Hazardous to the aquatic environment – acute hazard: cat.1

Copper(II)oxide

Hazardous to the aquatic environment – long-term hazard: cat.1, 2

Copper(II)oxide

15. Regulatory Information

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

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

Cobalt (III) oxide; Manganese(IV) oxide; Copper(II)oxide; Silver(I)oxide

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.



16. Other information

GHS classification and labelling

Skin Corr. 1: H314 Causes severe skin burns and eye damage

Skin Sens. 1: H317 May cause an allergic skin reaction

Muta. 2: H341 Suspected of causing genetic defects

STOT SE 1: H370 Causes damage to organs

STOT SE 2: H371 May cause damage to organs

STOT SE 3: H335 May cause respiratory irritation

STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure

Aquatic Acute 1: H400 Very toxic to aquatic life

Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects

Reference Book

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39–18)

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2022 TLVs and BEIs. (ACGIH)

Supplier's data/information

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2020).