



Safety Data Sheet

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

Product identifier:

Product name: tri-Cobalt tetra-oxide 1.6~3.4mm(6~10mesh)

SDS No. : Q1766E-3

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

FAX: +81-6-6946-1607

Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Respiratory sensitization: Category 1A

Skin sensitization: Category 1A

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

(Note) GHS classification without description: Not classified/Classification not possible

Label elements



Signal word: Danger

HAZARD STATEMENT

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

H317 May cause an allergic skin reaction

H372 Causes damage to organs through prolonged or repeated exposure (respiratory system)

PRECAUTIONARY STATEMENT

Prevention

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P284 In case of inadequate ventilation wear respiratory protection.

P264 Wash contaminated parts thoroughly after handling.

P280 Wear protective gloves.

P272 Contaminated work clothing should not be allowed out of the workplace.

P270 Do not eat, drink or smoke when using this product.

Response

P314 Get medical advice/attention if you feel unwell.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.



P362 + P364 Take off contaminated clothing and wash it before reuse.

Disposal

P501 Dispose of contents/container in accordance with local/national regulation.

Specific adverse human health effects

See "11. Toxicological Information".

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name	Content (%)	CAS RN	ENCS	Chemical formula
tri-Cobalt tetra-oxide	≤ 100	1308-06-1	1-267	Co ₃ O ₄

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

Section 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.

If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician.

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

IF ON SKIN

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.

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

Section 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

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

Runoff from fire control or dilution water may cause pollution.

See "10.Stability and Reactivity".

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 a full facepiece operated in the positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for containment and cleaning up

Liquid: Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

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

Preventive measures for secondary accident

Collect spillage.

Section 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.

(Precautions)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

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

Wash hands and contaminated parts thoroughly after handling.

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.
Storage in accordance with local/national regulation.
Container and packaging materials for safe handling
Use closed unbreakable containers.

Section 8. Exposure controls/personal protection

Control parameters

Administrative Control Levels and Concentration standard value

Japan control value 0.02mg-Co/m³

Occupational Exposure Limit

The Japan Society for Occupational Health

0.05mg-Co/m³

ACGIH

TWA: 0.02mg-Co/m³(I) (Pulm func changes)

Notation

DSEN; RSEN

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

Recommend to use protective equipment in conformity with the standards.

Use appropriate protective equipment in accordance with local/national regulation.

Respiratory protection

Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge corresponding to type of gases when using a gas mask.

Hand protection

Wear impervious protective glove.

Eye protection

Wear eye/face protection. Wear safety goggles in cases gas is generated.

Skin and body protection

Wear protective clothing.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Granular

Color: Black

Odor: Odorless

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 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

Solubility in solvent data is not available.

Partition coefficient n-octanol/water 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.

Other information

Other information is not available.

Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(As Cobalt(III) oxides)

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, Hydrogen peroxide

Hazardous decomposition products

Cobalt compounds

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Data for components of the product]

[NITE-CHRIP]

rat LD50: > 5000 mg/kg (OECD TG 401) (source: NITE)

Acute toxicity (Inhalation)

[Data for components of the product]

[NITE-CHRIP]

dust: rat LC50: > 5.06 mg/L (4-hour) (OECD TG 436) (source: NITE)

Irritant properties

Skin corrosion/irritation data is not available.

Serious eye damage/irritation data is not available.

Sensitization

Respiratory sensitization

[Product]

Category 1A, May cause allergy or asthma symptoms or breathing difficulties if inhaled

[Data for components of the product]



[NITE-CHRIP]

Category 1A (source: NITE)

Skin sensitization

[Product]

Category 1A, May cause an allergic skin reaction

[Data for components of the product]

[NITE-CHRIP]

Category 1A (source: NITE)

Mutagenic effects data is not available.

Carcinogenicity

[Data for components of the product]

[IARC]

Group 3 : Not classifiable as to its carcinogenicity to humans

[ACGIH]

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

Reproductive toxicity data is not available.

Specific target organ toxicity (STOT)

STOT-single exposure data is not available.

STOT-repeated exposure

[Product]

Category 1, Causes damage to organs through prolonged or repeated exposure

[Data for components of the product]

[NITE-CHRIP]

Category 1 (respiratory system) (source: NITE)

Aspiration hazard data is not available.

Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[NITE-CHRIP]

Algae (*Chlorella pyrenoidosa*) 96-hour EC50: 0.52 mg Co/L (OPPTS 850.5400) (test substance: Cobalt(II) dichloride (CAS RN: 7646-79-9)) (a converted value equivalent to this substance: 2.1 mg/L (>water solubility)) (source: NITE)

Hazardous to the aquatic environment, long-term (chronic)

[NITE-CHRIP]

Algae (*Chlorella pyrenoidosa*) 96-hour NOEC: 0.038 mg Co/L (OPPTS 850.5400) (test substance: Cobalt(II) dichloride (CAS RN: 7646-79-9)) (a converted value equivalent to this substance: 0.15 mg/L (>water solubility)) (source: NITE)

Water solubility

0.0468 mg/L (21.5°C) (OECD TG 105) (source: NITE)

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.

Section 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

Dispose of contents/container as industrial waste. Accordance with local/national regulation.

Section 14. Transport Information

UN Number or ID Number : Not regulated

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : Not regulated

IATA (Dangerous Goods Regulations)

UN Number or ID Number : Not regulated

Environmental hazards

Marine pollutants (yes/no) : no

Section 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

Applicable

Other regulatory information

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

Section 16. Other information

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 23rd edit., 2023 UN

IMDG Code, 2024 Edition (Incorporating Amendment 42-24)

IATA Dangerous Goods Regulations (67th Edition) 2026

2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2025 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

Recommendation of occupational exposure limits (2024-2025) (JSOH)

Supplier's data/information

General Disclaimer

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Unauthorized translation or modification is prohibited.

Please provide SDS to customers for selling or transferring.

All chemicals have unknown hazard. Handle the product with care.

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 Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2024).