



Safety Data Sheet

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

Product identifier:

Product name: Chromium(VI) oxide, powder

SDS No. : 16981E-2

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

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Oxidizing solids: Category 2

HEALTH HAZARDS

Acute toxicity (Oral): Category 3

Acute toxicity (Dermal): Category 2

Acute toxicity (Inhalation): Category 2

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Respiratory sensitization: Category 1

Skin sensitization: Category 1

Germ cell mutagenicity: Category 1B

Carcinogenicity: Category 1A

Reproductive toxicity: Category 1B

Specific target organ toxicity – single exposure: Category 1 (central nervous system; respiratory system; cardiovascular system; blood system; liver; kidney)

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

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

May intensify fire; oxidizer

Toxic if swallowed

Fatal in contact with skin

Fatal if inhaled

Causes severe skin burns and eye damage

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction



May cause genetic defects
May cause cancer
May damage fertility or the unborn child
Causes damage to organs(central nervous system; respiratory system; cardiovascular system; blood system; liver; kidney)
Causes damage to organs through prolonged or repeated exposure(respiratory system)
Very toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT**Prevention**

Avoid release to the environment.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from clothing and other combustible materials.
Do not breathe dust/fume/gas/mist/vapors/spray.
In case of inadequate ventilation wear respiratory protection.
Use only outdoors or in a well-ventilated area.
Do not get in eyes, on skin, or on clothing.
Wash contaminated parts thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response

In case of fire: Use appropriate media other than water to extinguish.
Collect spillage.
Get medical advice/attention if you feel unwell.
IF exposed or concerned: Get medical advice/attention.
IF exposed or concerned: Call a POISON CENTER/doctor/physician.
If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician.
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 immediately all contaminated clothing and wash it 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: Immediately call a POISON CENTER/doctor/physician.
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.

Specific Physical and Chemical hazards

Oxidizing material. Organic or combustible material may catch fire in contact with it.

3. Composition/information on ingredients**Mixture/Substance selection:****Substance**

Ingredient name:Chromium(VI) oxide

Content (%):98(min)

Chemical formula:CrO3



Chemicals No, Japan: 1-284

CAS No.: 1333-82-0

MW: 99.99

ECNO: 215-607-8

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.

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

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.

Immediately call a POISON CENTER/doctor/physician.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, foam, dry sand to extinguish.

Unsuitable extinguishing media

Inactive gas firefighting equipment

Halogenated firefighting system

Dry-powder firefighting equipment – hydrogen carbonate etc.

Dry-powder firefighting equipment – except for phosphate etc., hydrogen carbonate etc.

Carbon dioxide extinguisher

Halogenated extinguisher

Dry-powder extinguisher – hydrogen carbonate etc.

Dry-powder extinguisher – except for phosphate etc., hydrogen carbonate etc.

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.

Keep away from clothing and other combustible materials.

(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/eye protection/face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

Advice on general occupational hygiene

Do not get in eyes, on skin, or on clothing.

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 immediately all 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.

Keep under lock and key.

Container and packaging materials for safe handling

Glass

Polyethylene



8. Exposure controls/personal protection

Control parameters

Adopted value

(Chromium(VI) oxide)

ACGIH(2018) TWA: 0.0002mg-Cr(VI)/m³(I);

STEL: 0.0005mg-Cr(VI)/m³(I) (Lung & sinonasal cancer; resp tract irr; asthma)

Notation

(Chromium(VI) oxide)

Skin; DSEN; RSEN

OSHA-PEL

(Chromium(VI) oxide)

TWA: 1mg-Cr/m³ (insoluble salts)

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

Color: Dark red purple

Odor: Odorless

Melting point/Freezing point: 197°C

Boiling point or initial boiling point: (decomposes) 250°C

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: Easily soluble (61.7 g/100ml)

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

Vapor pressure data is not available.

Density and/or relative density: 2.7 g/cm³

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

Particle characteristics data is not available.



10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Hygroscopic (absorbs moisture from the air).

Possibility of hazardous reactions

Decomposes above 250° C . This produces chromic oxide and oxygen. This increases fire hazard. The substance is a strong oxidant. It reacts violently with combustible and reducing materials. This generates fire and explosion hazard. The solution in water is a strong acid. It reacts violently with bases and is corrosive. (ICSC 1194)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Bases, Reducing agents, Combustible materials

Hazardous decomposition products

Chromic oxide

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

rat LD50=52 - 113mg/kg (EU-RAR, 2005)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

rabbit LD50=57.7mg/kg (cal.) (CICAD 78, 2013)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

mist: rat LC50=0.217mg/L/4hr (EU-RAR, 2005)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

corrosive (ATSDR, 2012)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

human conjunctival injection, necrosis, corneal edema and corneal opacity (EU-RAER, 2005)

Sensitization

Respiratory sensitization

[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

cat. 1; ATSDR, 2012

Skin sensitization

[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

cat. 1; ATSDR, 2012

Germ cell mutagenicity



[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

cat. 1B; EU-RAR, 2005

Carcinogenicity

[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

cat.1A; IARC Gr.1 (IARC, 1990 (Cr(VI) compounds) et al.)

(Chromium(VI) oxide)

IARC-Gr.1 : Carcinogenic to humans

(Chromium(VI) oxide)

ACGIH-A1(as Cr(VI))(2018) : Confirmed Human Carcinogen

(Chromium(VI) oxide)

EU-Category 1A; Substances known to have carcinogenic potential for humans

Reproductive toxicity

[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

cat. 1B; Water-soluble chromium (VI)

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

central nervous system; respiratory system; cardiovascular system; blood system; liver;

kidney (ATSDR, 2012)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Chromium(VI) oxide)

respiratory system (CICAD 78, 2013)

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]

(Chromium(VI) oxide)

Crustacea (Ceriodaphnia dubia) LC50=0.145mg/L/48hr (Aquire, 2015)

Water solubility

(Chromium(VI) oxide)

good (ICSC, 2013)

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.: 1463

UN Proper Shipping Name :

CHROMIUM TRIOXIDE, ANHYDROUS

Class or division (Transport hazard class) : 5.1

Subsidiary hazard(s) : 6.1;8

Packing group : II

ERG GUIDE No.: 141

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1463

Proper Shipping Name :

CHROMIUM TRIOXIDE, ANHYDROUS

Class or division : 5.1

Subsidiary hazard(s) : 6.1;8

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 1463

Proper Shipping Name :

CHROMIUM TRIOXIDE, ANHYDROUS

Class or division : 5.1

Subsidiary hazard(s) : 6.1;8

Hazard labels : Oxidizer & Toxic & Corrosive

Packing group : II

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

Germ cell mutagenicity: cat.1, 1A, 1B

Chromium(VI) oxide

Carcinogenicity: cat.1, 1A, 1B

Chromium(VI) oxide

Reproductive toxicity: cat.1, 1A, 1B

Chromium(VI) oxide

Specific target organ toxicity – repeated exposure: cat.1

Chromium(VI) oxide

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

Chromium(VI) oxide

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

Chromium(VI) oxide



15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Chromium(VI) 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

Ox. Sol. 2: H272 May intensify fire; oxidizer

Acute Tox. 3: H301 Toxic if swallowed

Acute Tox. 2: H310 Fatal in contact with skin

Acute Tox. 2: H330 Fatal if inhaled

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

Resp. Sens. 1: H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

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

Muta. 1B: H340 May cause genetic defects

Carc. 1A: H350 May cause cancer

Repr. 1B: H360 May damage fertility or the unborn child

STOT SE 1: H370 Causes damage to organs

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

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)

2021 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).