

Safety Data Sheet

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

Product identifier:

Product name: Cobalt oxide, Black

Reference number(SDS): 32122jis_J_E1-2

Product type:

Reagent

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Respiratory sensitization: Category 1

Skin sensitization: Category 1

Carcinogenicity: Category 2

Specific target organ toxicity – single exposure: Category 1 (liver)

Specific target organ toxicity – single exposure: Category 2 (heart)

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

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H302–Harmful if swallowed

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

H317–May cause an allergic skin reaction

H351–Suspected of causing cancer

H370–Causes damage to organs

H371–May cause damage to organs

H372–Causes damage to organs through prolonged or repeated exposure

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

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

In case of inadequate ventilation wear respiratory protection.

Wash contaminated parts thoroughly after handling.

Wear protective gloves.

Cobalt oxide, Black, JUNSEI CHEMICAL CO., LTD., 32122jis_J_E1-2, 22/Dec/2021

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

Use personal protective equipment as required.

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

Response

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

Take off contaminated clothing and wash it before reuse.

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

Storage

Store locked up.

Disposal

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

3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name: Tricobalt tetraoxide

Content (%): ca. 85

Chemical formula: Co_3O_4

Chemicals No, Japan: 1-267

CAS No.: 1308-06-1

MW: 240.80

ECNO: 215-157-2

Ingredient name: Cobalt(II) oxide

Content (%): ca. 15

Chemical formula: CoO

Chemicals No, Japan: 1-267

CAS No.: 1307-96-6

MW: 74.93

ECNO: 215-154-6

This product' content(%): (as Co) 70.0 <

※1...Cobalt (II,III) oxide

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.

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

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Cough. Sore throat. Laboured breathing. Shortness of breath. Abdominal pain. Nausea.

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes. Pain of the eyes.

5. Fire-fighting measures**Extinguishing media****Suitable extinguishing media**

Use appropriate extinguishing media suitable for surrounding facilities.

The product is non-flammable.

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.

Runoff from fire control or dilution water may cause pollution.

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

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

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

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

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

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Any incompatibilities

Strong oxidizing agents, Hydrogen peroxide should not be mixed with the chemicals.

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

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

Keep cool. Protect from sunlight.

Store in accordance with local/national regulation.

Store locked up.

Container and packaging materials for safe handling data is not available.

Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

8. Exposure controls/personal protection

Control parameters

Control value

(Tricobalt tetraoxide; Cobalt(II) oxide)

Japan control value (2012) $\leq 0.02\text{mg-Co/m}^3$

Adopted value

(Tricobalt tetraoxide; Cobalt(II) oxide)

JSOH(1992) 0.05mg-Co/m^3

ACGIH(2019) TWA: 0.02mg-Co/m^3 (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

Respiratory protection

Wear respiratory protection.

Hand protection

Wear protective gloves.

Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

Eye protection

Wear safety glasses with side-shields or chemical safety goggle.

Wear eye/face protection.

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Heavy powder

Color: Black

Odor data is not available.

Odor threshold data is not available.

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): Non-flammable

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

Flash point: Non-flammable

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

pH data is not available.

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Insoluble

Solubility in solvent data is not available.

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

Vapor pressure data is not available.

Vapor density data is not available.

VOC data is not available.

Evaporation rate data is not available.

Density and/or relative density data is not available.

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

Relative density of the Vapor/air - mixture at 20°C (Air = 1) data is not available.

Critical temperature data is not available.

Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Runaway polymerization will not occur.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Reacts with hydrogen peroxide.

Conditions to avoid

Contact with incompatible materials.

Heat.

Incompatible materials

Strong oxidizing agents, Hydrogen peroxide.

Hazardous decomposition products

Cobalt oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Cobalt(II) oxide) rat LD50=159mg/kg (ATSDR, 2004)

Labor standard law, Japan; Toxic

Cobalt(II) oxide; Tricobalt tetraoxide

Irritant properties

Skin corrosion/irritation data is not available.

Serious eye damage/irritation data is not available.

Sensitization

MOHL_J Notice

Tricobalt tetraoxide; Cobalt(II) oxide

Respiratory sensitization

[GHS Cat. Japan, base data]

(Cobalt(II) oxide) cat. 1; JSOH, 2015

Skin sensitization

[GHS Cat. Japan, base data]

(Cobalt(II) oxide) cat. 1; JSOH, 2015

Mutagenic effects data is not available.

Carcinogenicity

[GHS Cat. Japan, base data]

(Cobalt(II) oxide)

cat.2; IARC Gr. 2B (IARC, 1991 (Co compounds) et al.)

(Cobalt(II) oxide; Tricobalt tetraoxide)

IARC-Gr.2B : Possibly carcinogenic to humans

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

NTP-Reasonably Anticipated To Be Human Carcinogen

JSOH-2B: Insufficient Evidence of Carcinogenicity for Humans

Reproductive toxicity data is not available.

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Cobalt(II) oxide) liver (ATSDR, 2004)

[cat.2]

[GHS Cat. Japan, base data]

(Cobalt(II) oxide) heart (ATSDR, 2004)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Cobalt(II) oxide) respiratory system; thyroid gland; blood system (MOE risk assessment vol.11, 2013)

Aspiration hazard data is not available.

Information on other hazards

Data on the preparation itself is not available.

12. Ecological Information

Ecotoxicity

Ecotoxicity data is not available.

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

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

14. Transport Information

UN No., UN CLASS

UN No. or ID No.: Not applicable

UN Proper Shipping Name : Not applicable

Class or division (Transport hazard class) : Not applicable

Packing group : Not applicable

Not applicable to IMDG Code

Not applicable to IATA Dangerous Goods Regulations

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

Cobalt(II) oxide

Maritime transport in bulk according to IMO instruments

Not applicable to Maritime transport in bulk according to IMO instruments

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Cobalt(II) oxide; Tricobalt tetraoxide

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

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

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

16. Other information

GHS classification and labelling

H302–Acute Tox. 4: H302 Harmful if swallowed

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

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

Cobalt oxide, Black, JUNSEI CHEMICAL CO., LTD., 32122jis_J_E1-2, 22/Dec/2021

H351-Carc. 2: H351 Suspected of causing cancer

H370-STOT SE 1: H370 Causes damage to organs

H371-STOT SE 2: H371 May cause damage to organs

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

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)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2021 Recommendation on TLVs (JSOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.14 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIIP"

(https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop)

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

Definitions and Abbreviations

SDS (Safety Data Sheet)

LD50 (Lethal Dose, 50%)

LC50 (Lethal Concentration, 50%)

IARC (International Agency for Research on Cancer)

ACGIH (American Conference of Governmental Industrial Hygienists)

EPA (US Environmental Protection Agency)

NTP (US National Toxicology Program)

JSOH (Japan Society for Occupational Health)

EU (European Union)

EC50 (Effective Concentration, 50%)

NOEC (No Observed Effect Concentration)

BOD (Biochemical Oxygen Demand)

COD (Chemical Oxygen Demand)

BCF (Bioconcentration Factor)

anh (anhydride)

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).