



Safety Data Sheet

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

Product identifier:

Product name: Magnesium perchlorate, blue 0.3–0.8mm (24–48mesh)

SDS No. : Q9181E–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

Telephone number: +81–6–6946–8061

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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 4

Respiratory sensitization: Category 1

Skin sensitization: Category 1

Germ cell mutagenicity: Category 2

Carcinogenicity: Category 2

Reproductive toxicity: Category 1B

Specific target organ toxicity – single exposure: Category 2 (central nervous system; gastrointestinal tract; liver; kidney)

Specific target organ toxicity – repeated exposure: Category 2 (nervous system; respiratory system; cardiovascular system; thyroid gland; blood system)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2

Hazardous to the aquatic environment (Long-term): Category 2

Label elements



Signal word: Danger

HAZARD STATEMENT

May intensify fire; oxidizer

Harmful if swallowed

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

Suspected of causing genetic defects

Suspected of causing cancer

May damage fertility or the unborn child

May cause damage to organs (central nervous system; gastrointestinal tract; liver; kidney)

May cause damage to organs through prolonged or repeated exposure (nervous system; respiratory system; cardiovascular system; thyroid gland; blood system)



Magnesium perchlorate, blue 0.3–0.8mm (24–48mesh), Q9181E–2, 2022/02/04

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.

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

Take off contaminated clothing and wash it before reuse.

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

IF SWALLOWED: Rinse mouth.

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:

Mixture

Ingredient name: Magnesium perchlorate

Content (%): 79–95

Chemical formula: $Mg(ClO_4)_2$

Chemicals No, Japan: 1–234

CAS No.: 10034–81–8

MW: 223.21

ECNO: 233–108–3

Ingredient name: Cobalt(II) chloride

Content (%): ≤ 5.0

Chemical formula: $CoCl_2$

Chemicals No, Japan: 1–207

CAS No.: 7646–79–9

MW: 129.8

ECNO: 231–589–4

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.

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.



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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

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

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

(Cobalt(II) chloride)

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

Notation

(Cobalt(II) chloride)

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



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- 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: Granularity
- Color: Blue
- Odor: Odourless to practically odourless
- 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: Soluble
 - 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
 - (Cobalt(II) chloride)
 - Reacts with oxidants. (ICSC 0783)
- Conditions to avoid
 - Contact with incompatible materials.
 - Contact with fire source.
- Incompatible materials
 - Oxidizing agents, Reducing agents, Organic substance
- Hazardous decomposition products
 - Chlorine compounds

11. Toxicological Information

- Information on toxicological effects
- Acute toxicity
 - Acute toxicity (Oral)
 - [GHS Cat. Japan, base data]
 - (Cobalt(II) chloride)



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rat LD50=80mg/kg (MOE risk assessment vol.11, 2013)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

human skin irritation (HSDB, 2015)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

eyes irritating (HSDB, 2015)

Sensitization

Respiratory sensitization

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

cat. 1; JSOH recommendation, 2015

Skin sensitization

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

cat. 1; JSOH recommendation, 2015

Germ cell mutagenicity

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

cat. 2; DFGOT vol.23, 2007

Carcinogenicity

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

cat.2; IARC Gr. 2B (IARC 86, 2006 (Co compounds) et al.)

[IARC]

(Cobalt(II) chloride)

Group 2B : Possibly carcinogenic to humans

[ACGIH]

(Cobalt(II) chloride)

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

[EU]

(Cobalt(II) chloride)

Category 1B; Substances presumed to have carcinogenic potential for humans

Reproductive toxicity

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

cat. 1B; MOE risk assessment vol.11, 2013 et al.

STOT

STOT–single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

central nervous system; gastrointestinal tract; liver; kidney (ATSDR, 2004)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

respiratory tract irritation (MOE risk assessment vol.11, 2013)

STOT–repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)



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nervous system; respiratory system; cardiovascular system; thyroid gland; blood system (MOE risk assessment vol.11, 2013)

[cat.2]

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

testis (MOE risk assessment vol.11, 2013)

Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Toxic to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

Waterweed (Lemna minor) EC50=0.47mg/L/7days (MOE Japan, 2013)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

(Cobalt(II) chloride)

Fish (Danio rerio) NOEC=0.13mg/L/16days (CICAD 69, 2006)

Water solubility

(Cobalt(II) chloride)

53 g/100 ml (20°C) (ICSC, 2013)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

(Cobalt(II) chloride)

log Pow=0.85 (ICSC, 2013)

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.: 1475

UN Proper Shipping Name :

MAGNESIUM PERCHLORATE

Class or division (Transport hazard class) : 5.1

Packing group : II

ERG GUIDE No.: 140

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1475

Proper Shipping Name :

MAGNESIUM PERCHLORATE



Magnesium perchlorate, blue 0.3–0.8mm (24–48mesh), Q9181E–2, 2022/02/04

Class or division : 5.1

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 1475

Proper Shipping Name :

MAGNESIUM PERCHLORATE

Class or division : 5.1

Hazard labels : Oxidizer

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

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

Cobalt(II) chloride

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

Cobalt(II) chloride

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Cobalt(II) chloride; Magnesium perchlorate

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. 4: H302 Harmful if swallowed

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. 2: H341 Suspected of causing genetic defects

Carc. 2: H351 Suspected of causing cancer

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

STOT SE 2: H371 May cause damage to organs

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

Aquatic Acute 2: H401 Toxic to aquatic life

Aquatic Chronic 2: H411 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



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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).