



Safety Data Sheet

Section 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–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

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 (gastrointestinal tract, liver, central nervous system, kidneys)

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

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 2

Hazardous to the aquatic environment, long-term (chronic): Category 2

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H272 May intensify fire; oxidizer

H302 Harmful if swallowed

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

H317 May cause an allergic skin reaction

H341 Suspected of causing genetic defects



H351 Suspected of causing cancer

H360 May damage fertility or the unborn child

H371 May cause damage to organs (gastrointestinal tract, liver, central nervous system, kidneys)

H373 May cause damage to organs through prolonged or repeated exposure (blood system, cardiovascular system, thyroid, nervous system, respiratory system)

H411 Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

P202 Do not handle until all safety precautions have been read and understood.

P273 Avoid release to the environment.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P220 Keep away from clothing and other combustible materials.

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.

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

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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

Response

P370 + P378 In case of fire: Use appropriate media to extinguish.

P391 Collect spillage.

P314 Get medical advice/attention if you feel unwell.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician.

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.

P330 IF SWALLOWED: Rinse mouth.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

Storage

P405 Store locked up.

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:

Mixture

Ingredient name	Content (%)	CAS RN	ENCS	Chemical formula
Magnesium perchlorate	79–95	10034–81–8	1–234	Mg(ClO ₄) ₂
Cobalt(II) chloride	≤ 5.0	7646–79–9	1–207	CoCl ₂

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.

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

*Fire Service Act Group 1 Hazardous Materials

Unsuitable extinguishing media

Carbon Dioxide/ Halon Extinguishing System

Dry Chemical Extinguishing System– Using Hydrogen Carbonates , etc./Others (except for phosphates etc., Hydrogen Carbonates etc.)

Fire Extinguisher Discharging Carbon Dioxide/Halogenide

Fire Extinguisher Discharging Dry Extinguishing agents–Using Hydrogen Carbonates, etc./Others (except for phosphates etc., Carbonates etc.)

*Cabinet Order Concerning the Control of Hazardous Materials (Attached Table 5) Other Group 1 Hazardous Materials

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.
- Keep away from clothing and other combustible materials.

(Exhaust/ventilator)

- Exhaust/ventilator should be available.

(Precautions)

- Avoid contact with skin.
- Avoid contact with eyes.

Safety Measures

- Do not handle until all safety precautions have been read and understood.
- 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 locked up. (P405)
- 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

(Cobalt(II) chloride)

Japan control value 0.02mg–Co/m³

Occupational Exposure Limit

The Japan Society for Occupational Health

(Cobalt(II) chloride)

0.05mg–Co/m³

ACGIH

(Cobalt(II) chloride)

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

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: Blue

Odor: Odorless to practically 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: Soluble

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

(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, Combustible materials

Hazardous decomposition products

Chlorine compounds, Magnesium compounds

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Category 4, Harmful if swallowed

[Data for components of the product]

[NITE-CHRIIP]

(Cobalt(II) chloride)

rat LD50: 80 mg/kg (source: NITE)

Irritant properties

Skin corrosion/irritation

[Data for components of the product]

[NITE-CHRIIP]

(Cobalt(II) chloride)

Category 2 (source: NITE)

Serious eye damage/irritation

[Data for components of the product]

[NITE-CHRIIP]



(Cobalt(II) chloride)

Category 2 (source: NITE)

Sensitization

Respiratory sensitization

[Product]

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

[Data for components of the product]

[NITE–CHRIP]

(Cobalt(II) chloride)

Category 1 (source: NITE)

Skin sensitization

[Product]

Category 1, May cause an allergic skin reaction

[Data for components of the product]

[NITE–CHRIP]

(Cobalt(II) chloride)

Category 1 (source: NITE)

Germ cell mutagenicity

[Product]

Category 2, Suspected of causing genetic defects

[Data for components of the product]

[NITE–CHRIP]

(Cobalt(II) chloride)

Category 2 (source: NITE)

Carcinogenicity

[Product]

Category 2, Suspected of causing cancer

[Data for components of the product]

[NITE–CHRIP]

(Cobalt(II) chloride)

Category 2 (source: NITE)

[ACGIH]

(Cobalt(II) chloride)

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

[NTP]

(Cobalt(II) chloride)

RAHC : Reasonably Anticipated to be Human Carcinogens

[EU]

(Cobalt(II) chloride)

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

Reproductive toxicity

[Product]

Category 1B, May damage fertility or the unborn child

[Data for components of the product]

[NITE–CHRIP]

(Cobalt(II) chloride)

Category 1B (source: NITE)

Specific target organ toxicity (STOT)

STOT–single exposure

[Product]



Category 2, May cause damage to organs

[Data for components of the product]

[NITE–CHRIP]

(Cobalt(II) chloride)

Category 1 (gastrointestinal tract, liver, central nervous system, kidneys), Category 3

(Respiratory tract irritation) (source: NITE)

STOT–repeated exposure

[Product]

Category 2, May cause damage to organs through prolonged or repeated exposure

[Data for components of the product]

[NITE–CHRIP]

(Cobalt(II) chloride)

Category 1 (blood system, cardiovascular system, thyroid, nervous system, respiratory system), Category 2 (testis) (source: NITE)

Aspiration hazard data is not available.

Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Product]

Category 2, Toxic to aquatic life

Category 2, Toxic to aquatic life with long lasting effects

[Data for components of the product]

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

[NITE–CHRIP]

(Cobalt(II) chloride)

Aquatic plant (Lemna minor) 7-day EC50 (growth, wet weight): 212 μ g Co/L (converted value: 0.47 mg CoCl₂/L) (source: NITE)

Crustacea (Daphnia magna) 48-hour LC50: 1110 μ g Co/L (converted value: 2.4 mg CoCl₂/L) (source: NITE)

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

[NITE–CHRIP]

(Cobalt(II) chloride)

Fish (Danio rerio) 16-day NOEC (survival): 0.06 mg Co/L (converted value: 0.13 mg CoCl₂/L) (source: NITE)

Water solubility

(Cobalt(II) chloride)

53 g/100 mL (20°C) (source: ICSC, 2013)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

[Data for components of the product]

(Cobalt(II) chloride)

log Pow: 0.85 (source: ICSC, 2013)

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

Avoid release to the environment.

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

Section 14. Transport Information

UN Number or ID Number : 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 Number or ID Number : 1475

UN Proper Shipping Name :

MAGNESIUM PERCHLORATE

Class or division (Transport hazard class) : 5.1

Packing group : II

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 1475

UN Proper Shipping Name :

MAGNESIUM PERCHLORATE

Class or division (Transport hazard class) : 5.1

Hazard labels : Oxidizer

Packing group : II

Environmental hazards

Marine pollutants (yes/no) : yes

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

Cobalt(II) chloride; Magnesium perchlorate

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 (66th Edition) 2025



2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2025 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

Recommendation of occupational exposure limits (2023–2024) (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 FY2023).