



Safety Data Sheet

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

Product identifier:

Product name: Potassium perchlorate

SDS No. : 6390E-1

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

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – repeated exposure: Category 2 (blood)

Label elements



Signal word: Danger

HAZARD STATEMENT

May intensify fire; oxidizer

Causes skin irritation

Causes serious eye irritation

May cause respiratory irritation

May cause damage to organs through prolonged or repeated exposure (blood)

PRECAUTIONARY STATEMENT

Prevention

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.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

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

Response

In case of fire: Use appropriate media other than water to extinguish.

Get medical advice/attention if you feel unwell.

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 occurs: Get medical advice/attention.

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.

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: potassium perchlorate

Content (%): 99(min)

Chemical formula: KClO4

Chemicals No, Japan: 1-230

CAS No.: 7778-74-7

MW: 138.5

ECNO: 231-912-9

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.

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.

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

Wash contaminated parts thoroughly after handling.

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

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: Crystals or crystalline powder

Color: Colorless to white

Odor data is not available.

Melting point/Freezing point: (decomposes) 400°C

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: 1.8g/100 ml (20°C)

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

Vapor pressure data is not available.

Density and/or relative density: 2.5 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

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Decomposes on heating. This produces toxic and corrosive fumes of chlorine and chloroxides.

The substance is a strong oxidant. It reacts with combustible and reducing materials. This generates fire and explosion hazard. (ICSC 0714)

**Conditions to avoid**

- Contact with incompatible materials.
- Contact with fire source.

Incompatible materials

- Reducing agents, Combustible materials

Hazardous decomposition products

- Chlorine, Chloroxides

11. Toxicological Information**Information on toxicological effects**

Acute toxicity data is not available.

Irritant properties**Skin corrosion/irritation**

- [GHS Cat. Japan, base data]
- (potassium perchlorate)
- human irritation (HSDB, 2005 et al)

Serious eye damage/irritation

- [GHS Cat. Japan, base data]
- (potassium perchlorate)
- human irritation (HSDB, 2005 et al)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

STOT**STOT-single exposure**

- [cat.3 (resp. irrit.)]
- [GHS Cat. Japan, base data]
- (potassium perchlorate)
- respiratory tract irritation (HSDB, 2005)

STOT-repeated exposure

- [cat.2]
- [GHS Cat. Japan, base data]
- (potassium perchlorate)
- blood (ICSC(J), 1999)

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****Hazardous to the aquatic environment (Acute)**

- [GHS Cat. Japan, base data]
- (potassium perchlorate)
- Crustacea (*Daphnia magna*) EC50=1310mg/L/24hr (940mg ClO₄⁻/L/24hr cal.) (MOE risk assessment vol.9, 2011)

Water solubility

- (potassium perchlorate)
- 1.8 g/100 ml (20°C) (ICSC, 1999)

**Persistence and degradability**

Persistence and degradability data is not available.

Bioaccumulative potential

(potassium perchlorate)

LogKow=-7.18 (EST, PhysProp Database, 2018)

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. or ID No.: 1489

UN Proper Shipping Name :

POTASSIUM 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.: 1489

Proper Shipping Name :

POTASSIUM PERCHLORATE

Class or division : 5.1

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 1489

Proper Shipping Name :

POTASSIUM 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) : no

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

potassium 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

Skin Irrit. 2: H315 Causes skin irritation

Eye Irrit. 2: H319 Causes serious eye irritation

STOT SE 3: H335 May cause respiratory irritation

STOT RE 2: H373 May cause 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)

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).