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KAIDA YISHENG CO., LTD.

Address: 1301 Bank of America Tower, 12 Harcourt Road Central, Hong Kong  
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## 原材料说明 MATERIAL SPECIFICATION

原材料 Material: POTASSIUM PERMANGANATE

批号 Batch No :1803170135 分子式 Formula :  $\text{KMnO}_4$

分子量 Molecular Weight : 158.03

外观 Appearance: DARK PURPLE NEEDLE-LIKE CRYSTALS

包装 Package : IN 50KG IRON DRUM

| INDEX           | RESULT | STANDARD     |
|-----------------|--------|--------------|
| KMNO4           | 99.50% | 99.0%-100.5% |
| CHLORIDE        | 0.006% | 0.02% MAX    |
| SULFATE         | 0.03%  | 0.05% MAX    |
| WATER INSOLUBLE | 0.054% | 1.0% MAX     |

BATCH NO:1803170135

MANUFACTURED DATE: MARCH.17, 2018

EXPIRY DATE: MARCH.17, 2021



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## MSDS FOR POTASSIUM PERMANGANATE

### 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product Name: Potassium Permanganate

Supplier's details: KAIDA YISHENG CO., LTD.  
TEL: (852)3589 3359 FAX: (852)3589 3399

### 2. HAZARDS IDENTIFICATION

GHS classification

|                            |            |
|----------------------------|------------|
| Oxidizing Solid:           | Category 2 |
| Acute toxicity:            | Category 4 |
| Aquatic toxicity(acute):   | Category 1 |
| Aquatic toxicity(chronic): | Category 1 |

Symbols



Signal words

Danger

Hazard statements

H272 May intensify fire; oxidizer.  
H302 Harmful if swallowed.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces.- No smoking.  
P220 Keep/Store away from clothing/combustible materials.  
P221 Take any precaution to avoid mixing with combustibles  
P262 Do not get in eyes, on skin or on clothing.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P501 Dispose of contents/container to local / regional / national / international regulations.

Other Hazards

Eye contact

Potassium Permanganate is damaging to eye tissue on contact. It may cause burns that result in damage to the eye.

Skin contact

Momentary contact of solution at room temperature may be irritating to the skin, leaving brown stains. Prolonged contact is damaging to the skin. Concentrated solutions at elevated temperature and crystals are damaging to the skin.

Inhalation

Airborne concentrations of potassium permanganate in the form of dust or mist may cause damage to the respiratory tract.

Ingestion

Potassium permanganate, if swallowed, may cause burns to mucous membranes of the mouth, throat, esophagus and stomach.



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### 3.COMPOSITION / INFORMATION ON INGREDIENTS

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Chemical Name: Potassium permanganate  
%: >99  
CAS NO.: 7722-64-7  
EINECS : 231-760-3  
EU INDEX NO.: 025-002-00-9  
UN NO: 1490

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### 4.FIRST AID MEASURES

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**Skin Contact:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Remove contaminated clothing and footwear. Caution: Solution may ignite certain textiles. Wash clothing and decontaminate footwear before reuse.

**Eye Contact:**

In case of contact, immediately flush eyes with running water for at least 20 minutes. Remove any contact lenses and open eyes wide apart. Get medical aid immediately. Note to physician: Decomposition products are alkaline.

**Inhalation:**

If inhaled, remove to fresh air at once. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Ingestion:**

Provide rest, warmth and fresh air. If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

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### 5.FIRE FIGHTING MEASURES

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**General Information:**

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Strong oxidizer. Contact with other material may cause fire. Some oxidizer may react explosively with hydrocarbons (fuel). May accelerate burning if involved in a fire. Containers may explode when heated.

**Extinguishing Media:**

Use large quantities of water. Do not use dry chemicals, CO<sub>2</sub>, Halon or foams.

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### 6. ACCIDENTAL RELEASE MEASURES

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**General Information:**

Use proper personal protective equipment as indicated in Section 8. Avoid inhalation of dust and vapors. Avoid contact with skin and eyes. Provide adequate ventilation.

**Spills/Leaks:**

Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body. Avoid generating dusty conditions. Provide ventilation. Do not use combustible materials such as paper towels to clean up spill.

**Spill clean up methods:**

Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like. Flush contaminated with plenty of water. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

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### 7.HANDLING AND STORAGE

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**Handling:**

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep from contact with clothing and other combustible materials. Discard contaminated shoes. Do not breathe dust. Do not breathe spray or mist. Inform laundry personnel of contaminant's hazards.

**Storage:**

Oxidiser storage. Do not store near combustible materials. Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids. Keep away from flammable liquids.

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Keep away from reducing agents. Avoid storage on wood floors.

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## 8. EXPOSURE CONTROL/ PERSONAL PROTECTION

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Exposure Limit: 0.2 mg/m<sup>3</sup> MAC (as MnO<sub>2</sub>)

Engineering Controls:

Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower

Personal Protective Equipment



Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators:

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance: Dark purple solid with metallic luster

Odor:

odorless

pH:

7-9 (20g/l H<sub>2</sub>O)

Vapor Pressure:

Negligible

Vapor Density:

Not available

Evaporation Rate:

Not available

Viscosity:

Not available

Boiling Point:

Not applicable.

Freezing/Melting Point:

240 deg C ( 464.00°F )

Solubility in water:

6.4 g/100 ml @ 20°C

Specific Gravity/Density:

2.700 g/cm<sup>3</sup>

Molecular Formula:

KMnO<sub>4</sub>

Molecular Weight:

158.03

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## 10. STABILITY AND REACTIVITY

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Chemical Stability: Stable under normal temperatures and pressures

Conditions to Avoid:

Avoid heat, flames and other sources of ignition. Avoid excessive heat for prolonged periods of time. Dust generation, temperatures above 150°C.

Incompatibilities with Other Materials:

Strong reducing agents, strong acids, alcohols, formaldehyde, peroxides, arsenites, mercurous salts, hypophosphites, combustible organics, sulfites, bromides, hydrochloric acid, charcoal, iodides, metal powders, ethylene glycol, organic materials, some metals, ferrous salts.

Decomposition Products: Oxygen, oxides of potassium, oxides of manganese.

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## 11. TOXICOLOGICAL INFORMATION

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Exposure Symptoms Description

Inhalation

The product may be absorbed into the body by inhalation. Major effects of exposure: respiratory disorder, cough.

ingestion

Ingestion

Harmful, if swallowed. The estimated lethal human dose is 10 g. ingestion may cause nausea, vomiting, sore throat, stomach-ache, and eventually lead to a perforation of the intestine. Liver and kidney injuries may occur.

#### Skin Contact

The product may be absorbed into the body through the skin. Major effects of exposure: severe irritation, damage to the skin, and brown staining of skin.

#### Eye Contact

Contact with eye is damaging to eye tissues. It may cause severe burns that result in damage to the eye.

#### Acute Toxicity

Oral, mouse: LD50 = 2157 mg/kg; Oral, mouse: LD50 = 750 mg/kg; Oral, rat: LD50 = 780 mg/kg male (14 days), 525 mg/kg female (14 day).

Harmful if swallowed. ALD: 10g. ingestion may cause nausea, vomiting, sore throat, stomach-ache and eventually lead to a perforation of the intestine. Liver and kidney injuries may occur.

#### Chronic Toxicity

No known cases of chronic poisoning due to permanganates have been reported. Prolonged exposure, usually over many years, to heavy concentrations of manganese oxides in the form of dust and fumes may lead to chronic manganese poisoning, chiefly involving the central nervous system.

#### Carcinogenicity

Potassium permanganate - Not listed as a carcinogen by ACGIH, NIOSH, OSHA, IARC or NTP.

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## 12. ECOLOGICAL INFORMATION

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#### Eco toxicity

Very toxic to aquatic organisms.

#### Component analysis-aquatic toxicity

|           |                            |                         |
|-----------|----------------------------|-------------------------|
| 96Hr LC50 | Rainbow trout              | 1.8 mg/L                |
| 96Hr LC50 | Bluegill sunfish           | 2.3 mg/L                |
| 96Hr LC50 | Milk fish (Chanos Chanos ) | 1.4 mg/L                |
| 96Hr LC50 | Carassius auratus          | 3.3-3.93 mg/L (static)  |
| 96Hr LC50 | Cyprinus carpio            | 2.97-3.11 mg/L          |
| 96Hr LC50 | Cyprinus carpio            | 3.16-3.77 mg/L          |
| 96Hr LC50 | Lepomis macrochirus        | 2.3 mg/L (flow-through) |
| 96Hr LC50 | Lepomis macrochirus        | 1.8-5.6 mg/L (static)   |
| 96Hr LC50 | Lepomis macrochirus        | 2.7 mg/L (static)       |
| 96Hr LC50 | Oncorhynchus mykiss        | 1.08-1.38 mg/L          |
| 96Hr LC50 | Oncorhynchus mykiss        | 0.77-1.27 mg/L          |

#### Mobility

Miscible in water

#### Persistence and Degradability

Permanganate has a low estimated lifetime in the environment, being readily converted by oxidizable materials to insoluble MnO<sub>2</sub>.

#### Bioaccumulative Potential

In non-reducing and non-acidic environments, MnO<sub>2</sub> is insoluble and has a very low bioaccumulative potential.

#### General notes

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Very toxic for aquatic organisms.

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## 13. DISPOSAL CONSIDERATIONS

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#### General information:

Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local Waste Disposal Authority. Do not puncture or incinerate even when empty.

#### Disposal methods:

Dispose of waste and residues in accordance with local authority requirements.

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## 14. TRANSPORT INFORMATION

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Shipping Name: POTASSIUM PERMANGANATE

Hazard Class: 5.1

UN Number: UN1490

Packing Group: II



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## 15. REGULATORY INFORMATION

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European and International Regulations Germany Water Classification:

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Potassium permanganate(7722-64-7)

Number 1936, hazard class 3 – severe hazard to waters

CLP Classification

This product is hazardous according to the Regulation (EC) No. 1272/2008 on Classification, Labeling and Packaging of Substances and Mixtures (CLP).

Oxidizing solid, Category 2

Acute toxicity, Category 4

Hazardous to the Aquatic Environment - Hazard, Category 1

Hazardous to the Aquatic Environment - Hazard, Category 1

CLP Hazard Symbols



CLP Hazard Statements

|             |   |
|-------------|---|
| H272        | May intensify fire, oxidizer  |
| H302        | Harmful, if swallowed   |
| H410        | Very toxic to aquatic life with long lasting effects                      |
| P210        | Keep away from heat/sparks/open flames/hot surfaces. No smoking           |
| P220        | Keep/Store away from clothing/combustible materials.                      |
| P260        | Do not breathe dust   |
| P280        | Wear protective gloves/protective clothing/eye protection/face protection |
| P370 + P378 | In case of fire: Use water for extinction                                 |
| P501        | Dispose of contents/container to appropriate places                       |
| P273        | Avoid release to the environment.   |

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**16 .Other Information**

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