

## Material Safety Data Sheet

Version 4.0

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## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Potassium permanganate

Product Number : 223468

Brand : Sigma-Aldrich

Company : Sigma-Aldrich Canada, Ltd  
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CANADA

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## 2. HAZARDS IDENTIFICATION

## Emergency Overview

## WHMIS Classification

C

Oxidizing Material

Oxidizer

## GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H272

May intensify fire; oxidiser.

H302

Harmful if swallowed.

H400

Very toxic to aquatic life.

Precautionary statement(s)

P220

Keep/Store away from clothing/ combustible materials.

P273

Avoid release to the environment.

## HMIS Classification

Health hazard:

1

Flammability:

0

Physical hazards:

2

## Potential Health Effects

Inhalation

May be harmful if inhaled. May cause respiratory tract irritation.

Skin

May be harmful if absorbed through skin. May cause skin irritation.

Eyes

May cause eye irritation.

Ingestion

Harmful if swallowed.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula :  $\text{KMnO}_4$

Molecular Weight : 158.03 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Potassium permanganate</b>			
7722-64-7	231-760-3	025-002-00-9	-

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## 4. FIRST AID MEASURES

### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

### If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

### Further information

Use water spray to cool unopened containers.

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

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## 7. HANDLING AND STORAGE

### Precautions for safe handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Keep away from combustible material.

### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Potassium permanganate	7722-64-7	TWA	1 mg/m3	2004-04-30	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	5 mg/m3	2000-01-12	Canada. Quebec OELs
		TWAE V	0.2 mg/m3	2005-02-03	Canada. Ontario OELs

		TWA	0.2 mg/m3	2004-08-01	Canada. British Columbia OEL
Remarks	Adverse reproductive effect				

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves. For prolonged or repeated contact use protective gloves.

#### Eye protection

Safety glasses with side-shields conforming to EN166

#### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	crystalline
Colour	dark violet

### Safety data

pH	no data available
Melting point	240 °C (464 °F)
Boiling point	no data available
Flash point	not applicable
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	2.710 g/cm3
Water solubility	no data available

## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Conditions to avoid

no data available

### Materials to avoid

Strong reducing agents, Powdered metals, Peroxides, Zinc, Copper

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Potassium oxides, Manganese/manganese oxides

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

LD50 Oral - rat - 1,090 mg/kg

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**

no data available

**Specific target organ toxicity - single exposure (GHS)**

no data available

**Specific target organ toxicity - repeated exposure (GHS)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

**Signs and Symptoms of Exposure**

Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**

RTECS: SD6475000

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**12. ECOLOGICAL INFORMATION****Toxicity**

Toxicity to fish	LC50 - <i>Oncorhynchus mykiss</i> (rainbow trout) - 0.3 - 0.6 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - <i>Daphnia magna</i> (Water flea) - 0.084 mg/l - 48 h

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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### 13. DISPOSAL CONSIDERATIONS

#### Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

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### 14. TRANSPORT INFORMATION

#### DOT (US)

UN-Number: 1490 Class: 5.1 Packing group: II  
Proper shipping name: Potassium permanganate  
Reportable Quantity (RQ): 100 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

#### IMDG

UN-Number: 1490 Class: 5.1 Packing group: II EMS-No: F-H, S-Q  
Proper shipping name: POTASSIUM PERMANGANATE  
Marine pollutant: No

#### IATA

UN-Number: 1490 Class: 5.1 Packing group: II  
Proper shipping name: Potassium permanganate

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### 15. REGULATORY INFORMATION

#### DSL Status

All components of this product are on the Canadian DSL list.

#### WHMIS Classification

C Oxidizing Material Oxidizer

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### 16. OTHER INFORMATION

#### Further information

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