

Material Safety Data Sheet

Version 4.5

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Potassium permanganate

Product Number : 399124

Brand : Sigma-Aldrich

Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich Canada Co.
2149 Winston Park Drive
OAKVILLE ON L6H 6J8
CANADA

Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA

Telephone : +1 9058299500

Fax : +1 9058299292

Emergency Phone # (For both supplier and manufacturer) : 1-800-424-9300

Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

WHMIS Classification

C Oxidizing Material Oxidizer

GHS Classification

Oxidizing solids (Category 2)
Acute toxicity, Oral (Category 4)
Acute aquatic toxicity (Category 1)

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 Harmful if absorbed through skin. May cause skin irritation.

Eyes
Ingestion

May cause eye irritation.
Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : KMnO_4 KMnO_4
Molecular Weight : 158.03 g/mol

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

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

Flush eyes with water as a precaution.

If swallowed

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

5. FIREFIGHTING MEASURES

Conditions of flammability

Not flammable or combustible.

Suitable extinguishing media

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

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

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

Explosion data - sensitivity to mechanical impact

no data available

Explosion data - sensitivity to static discharge

no data available

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

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

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. 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 heat and sources of ignition.

Conditions for safe storage

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Potassium permanganate	7722-64-7	TWAE V	0.2 mg/m ³	Canada. Ontario OELs
		TWA	0.2 mg/m ³	Canada. British Columbia OEL
Remarks	Adverse reproductive effect			
		TWA	1 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	5 mg/m ³	Canada. Quebec OELs
		TWA	0.2 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
		TWA	0.2 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWAE V	5 mg/m ³	Canada. Quebec OELs
		TWAE V	0.2 mg/m ³	Canada. Ontario OELs
		TWA	0.2 mg/m ³	Canada. British Columbia OEL
	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. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Immersion protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 480 min

Material tested: Dermatrill® (Aldrich Z677272, Size M)

Splash protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm
Break through time: > 30 min
Material tested: Dermatrill® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

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

Specific engineering controls

Use mechanical exhaust or laboratory fumehood to avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	crystalline
Colour	dark violet

Safety data

pH	no data available
Melting point/freezing point	Melting point/range: 240 °C (464 °F)
Boiling point	no data available
Flash point	not applicable
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	2.710 g/cm ³
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

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
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50

LD50 Oral - rat - 1,090 mg/kg

Inhalation LC50

no data available

Dermal LD50

no data available

Other information on acute toxicity

no data available

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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

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

Signs and Symptoms of Exposure

Contact with skin can cause:, Oedema, Necrosis, Effects due to ingestion may include:, methemoglobinemia, psychological disturbances

Synergistic effects

no data available

Additional Information

RTECS: SD6475000

12. ECOLOGICAL INFORMATION**Toxicity**

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.3 - 0.6 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (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 life.

13. DISPOSAL CONSIDERATIONS**Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

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

15. REGULATORY INFORMATION

WHMIS Classification

C Oxidizing Material Oxidizer

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. OTHER INFORMATION

Further information

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