



MATERIAL SAFETY DATA SHEET
Potassium permanganate

Section 1 - Chemical Product and Company Identification

MSDS Name: Potassium permanganate

Catalog Numbers: BP/P340, P/6520/53, P/6520/60, P/6520/63, P/6520/65, P/6560/50, P/6560/53, P/6560/60, P/6560/65, P/6560/70, P/6570

Synonyms: Permanganic acid, potassium salt; Permanganate of potash; Chameleon mineral.

Company Identification: Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG

For information in Europe, call: (01509) 231166

Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
7722-64-7	Potassium permanganate	>98	231-760-3

Hazard Symbols: XN O N



Risk Phrases: 22 50/53 8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Harmful if swallowed. Contact with combustible material may cause fire. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Potential Health Effects

- Eye:** Causes severe eye irritation and possible burns. May cause chemical conjunctivitis and corneal damage.
- Skin:** Causes skin irritation and possible burns.
- Ingestion:** May cause liver and kidney damage. May cause perforation of the digestive tract. May cause central nervous system effects. In high doses, manganese may increase anemia by interfering with iron absorption.
- Inhalation:** Causes respiratory tract irritation with possible burns. The lowest exposure concentration of manganese at which early effects on the CNS and the lungs may occur is still unknown. However, once neurological signs are present, they tend to continue and worsen after exposure ends. Extreme exposures could result in a build-up of fluid in the lungs (pulmonary edema) that might be fatal in severe cases.
- Chronic:** Chronic inhalation or ingestion may result in manganism characterized by neurological symptoms such as headache, apathy, and weakness of the legs, followed by psychosis and neurological symptoms similar to those of Parkinson's disease. Other chronic effects from inhaling high amounts of manganese include an increased incidence of cough and bronchitis and susceptibility to infectious lung disease.

Section 4 - First Aid Measures

- Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.
- Skin:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse. NOTE: Contaminated clothing may be a fire hazard.
- Ingestion:** 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.
- Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
- Notes to Physician:** Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

- 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 oxidizers 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, CO₂, Halon or foams.

Section 6 - Accidental Release Measures

- General Information:** Use proper personal protective equipment as indicated in Section 8.
- 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. Avoid generating dusty conditions. Provide ventilation. Do not use combustible materials such as paper towels to clean up spill.

Section 7 - Handling and Storage

- 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:** 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. Keep away from reducing agents. Avoid storage on wood floors.

Section 8 - Exposure Controls, Personal Protection

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.

Exposure Limits

CAS# 7722-64-7:

United Kingdom, WEL - TWA: (manganese, inorganic compounds): 0.5 mg/m³
TWA United Kingdom, WEL - STEL: (manganese, inorganic compounds): 1.5 mg/m³ STEL

United States OSHA: 5 mg/m³ Ceiling (as Mn) (Manganese compounds, n.o.s.).
Belgium - TWA: (manganese compounds, n.o.s.): 0.2 mg/m³ VLE (as Mn)
Japan: (manganese, inorganic compounds): 0.3 mg/m³ OEL (as Mn)
Malaysia: (manganese, inorganic compounds): 0.2 mg/m³ TWA (as Mn)
Netherlands: (manganese compounds, n.o.s.): 3 mg/m³ STEL (as Mn)
Spain: (manganese, inorganic compounds): 0.2 mg/m³ VLA-ED (as Mn)

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.

Section 9 - Physical and Chemical Properties

Physical State: Crystals

Color: dark purple - bronze

Odor: odorless

pH: 7-9 (20 g/l H₂O)

Vapor Pressure: Negligible

Viscosity: Not available

Boiling Point: Not applicable.

Freezing/Melting Point: 240 deg C (464.00°F)

Autoignition Temperature: Not applicable

Flash Point: Not applicable.

Explosion Limits: Lower: Not available

Explosion Limits: Upper: Not available

Decomposition Temperature:

Solubility in water: 6.4 g/100 ml @ 20°C

Specific Gravity/Density: 2.700 g/cm³

Molecular Formula: KMnO₄

Molecular Weight: 158.03

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: 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.

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

Hazardous Polymerization Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 7722-64-7: SD6475000

LD50/LC50: RTECS:
CAS# 7722-64-7: Oral, mouse: LD50 = 2157 mg/kg;
Oral, mouse: LD50 = 750 mg/kg;
Oral, rat: LD50 = 750 mg/kg;

Other: The estimated lethal human dose by ingestion is 10 grams, with death being delayed by up to one month: Oral, rat: LD50 = 1090 mg/kg. Oral, human: LDLo = 143 mg/kg.

Carcinogenicity: Potassium permanganate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Fish: Channel catfish: LC50 = 0.75 mg/L; 96 Hr; Unspecified
Fish: Goldfish: LC50 = 3.6 mg/L; 24 Hr; Unspecified
Fish: Striped bass: LC50 = 1.5-5.0 mg/L; 24 Hr; Static bioassay

Other: Harmful to aquatic life in very low concentrations.

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	POTASSIUM PERMANGANATE	POTASSIUM PERMANGANATE	POTASSIUM PERMANGANATE
Hazard Class:	5.1	5.1	5.1
UN Number:	1490	1490	1490
Packing Group:	II	II	II

USA RQ: CAS# 7722-64-7: 100 lb final RQ; 45.4 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN O N

Risk Phrases:

R 22 Harmful if swallowed.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 8 Contact with combustible material may cause fire.

Safety Phrases:

S 60 This material and its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)

CAS# 7722-64-7: 2

Canada

CAS# 7722-64-7 is listed on Canada's DSL List

US Federal

TSCA

CAS# 7722-64-7 is listed on the TSCA
Inventory.

Section 16 - Other Information

MSDS Creation Date: 3/02/1999

Revision #10 Date 9/14/2006

Revisions were made in Sections: 11

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