

Material Safety Data Sheet

Potassium permanganate

ACC# 19520

Section 1 - Chemical Product and Company Identification

MSDS Name: Potassium permanganate**Catalog Numbers:** AC196750000, AC196750010, AC196752500, AC207740000, AC207740010, AC207740250, AC218680000, AC218681000, AC424170000, AC424170250, 19675-0250, 19675-5000, 20774-5000, 42417-0025, 42417-5000, NC9368615, NC9667433, P279-212, P279-500, P287-212, P287-500**Synonyms:** Permanganic acid, potassium salt; Permanganate of potash; Chameleon mineral.**Company Identification:**Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410**For information, call:** 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7722-64-7	Potassium permanganate	>98	231-760-3

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: bronze crystals.

Danger! Strong oxidizer. Contact with other material may cause a fire. Causes severe eye and skin irritation with possible burns. May be harmful if swallowed. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns.**Target Organs:** Central nervous system, lungs, respiratory system, gastrointestinal system, eyes, skin.**Potential Health Effects****Eye:** Causes severe eye irritation and possible burns. May cause chemical conjunctivitis and corneal damage. Recovery is usually complete, but in severe cases, permanent damage such as a dense, white cloudiness of the cornea may occur.**Skin:** Causes skin irritation and possible burns. Skin contact can cause brown stains in the area, and possible hardening of the outer skin layer.**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.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower:Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0; Special Hazard: OX

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

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Potassium permanganate	0.2 mg/m ³ TWA (as Mn) (listed under Manganese, inorganic compounds).	1 mg/m ³ TWA (as Mn) (listed under Manganese compounds, n.o.s.). 500 mg/m ³ IDLH (as Mn) (listed under Manganese compounds, n.o.s.).	5 mg/m ³ Ceiling (as Mn) (listed under Manganese compounds, n.o.s.).

OSHA Vacated PELs: Potassium permanganate: No OSHA Vacated PELs are listed for this chemical.

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

Appearance: dark purple - bronze

Odor: odorless

pH: 7-9 (20 g/l H₂O)

Vapor Pressure: Negligible

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not applicable.

Freezing/Melting Point:240 deg C
Decomposition Temperature:150 deg C
Solubility: 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, organic materials, arsenites, bromides, iodides, hydrochloric acid, charcoal, mercurous salts, hypophosphites, sulfites, alcohols, ferrous salts, strong acids, some metals, formaldehyde, metal powders, ethylene glycol, peroxides, combustible organics.

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:

CAS# 7722-64-7:

Oral, mouse: LD50 = 2157 mg/kg;

Oral, mouse: LD50 = 750 mg/kg;

Oral, rat: LD50 = 750 mg/kg;

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:

CAS# 7722-64-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: The U.S. EPA stated that epidemiological studies of inorganic manganese compounds in humans indicate effects on the respiratory system at levels below 1 mg/m³.

Teratogenicity: No information found

Reproductive Effects: Men exposed to manganese dusts showed a decrease in fertility.

Mutagenicity: Micronucleus Test: Oral, mouse = 205 mg/kg/24H (Continuous).; Cytogenetic Analysis: Oral, mouse = 718 mg/kg/7D (Continuous).; Cytogenetic Analysis: Mouse, Mammary gland = 1 mmol/L/48H.; Sperm Morphology: Oral, mouse = 513 mg/kg/5D (Continuous).

Neurotoxicity: Manganese is neurotoxic.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Channel catfish: LC50 = 0.75 mg/L; 96 Hr; UnspecifiedFish: Goldfish: LC50 = 3.6 mg/L; 24 Hr; UnspecifiedFish: Striped bass: LC50 = 1.5-5.0 mg/L; 24 Hr; Static bioassay No data available.

Environmental: No information available.

Physical: No information available.

Other: Harmful to aquatic life in very low concentrations.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	POTASSIUM PERMANGANATE	POTASSIUM PERMANGANATE
Hazard Class:	5.1	5.1
UN Number:	UN1490	UN1490
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA

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

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

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

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 7722-64-7: immediate, delayed, fire.

Section 313

This material contains Potassium permanganate (listed as Manganese compounds, n.o.s.), >98%,

(CAS# 7722-64-7) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 7722-64-7 (listed as Manganese compounds, n.o.s.) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 7722-64-7 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7722-64-7 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, (listed as Manganese compounds, n.o.s.), Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

XN O N

Risk Phrases:

R 22 Harmful if swallowed.

R 8 Contact with combustible material may cause fire.

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

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 - DSL/NDSL

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

Canada - WHMIS

This product has a WHMIS classification of C, E.

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

Canadian Ingredient Disclosure List

CAS# 7722-64-7 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 3/02/1999

Revision #11 Date: 2/15/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.