Material Safety Data Sheet
Potassium Permanganate Solution (1.0N)

ACC# 90870

Section 1 - Chemical Product and Company Identification

MSDS Name: Potassium Permanganate Solution (1.0N)
Catalog Numbers: SP2821, SP2824
Synonyms:
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
7732-18-5	Water	96.84	231-791-2
7722-64-7	Potassium permanganate	3.16	231-760-3

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: purple liquid.
Danger! Oxidizer. Contact with other material may cause fire. May cause eye, skin, and respiratory tract irritation. May be harmful if swallowed. May cause kidney damage. The toxicological properties of this material have not been fully investigated.
Target Organs: Blood, kidneys, central nervous system, liver.

Potential Health Effects
Eye: May cause eye irritation. May cause conjunctivitis.
Skin: May cause skin irritation. Skin contact can cause brown stains in the area, and possible hardening of the outer skin layer.
Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed. May form methemoglobin which in sufficient concentration causes cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). In high doses, manganese may increase anemia by interfering with iron absorption. May cause nausea, vomiting, and diarrhea, possibly with blood. Manganese in general is a central nervous system poison, and potassium permanganate has also been shown to have this property.
Inhalation: May cause respiratory tract irritation. Aspiration may lead to pulmonary edema. May cause acute pulmonary edema, asphyxia, chemical pneumonitis, and upper airway obstruction caused by edema.
Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis. May cause liver and kidney damage. Laboratory experiments have resulted in mutagenic effects. Chronic manganese toxicity through inhalation may result in "manganism", which is a disease of the central nervous system involving psychic and neurological disorders. May cause adverse reproductive effects.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Absorption of this product into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Moderate degrees of cyanosis need to be treated only by supportive measures: bed rest and oxygen inhalation. If cyanosis is severe, intravenous injection of Methylene Blue, 1mg/kg of body weight may be of value.

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. Strong oxidizer. Contact with other material may cause fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water with caution and in flooding amounts. Some oxidizers may react explosively with hydrocarbons(fuel). May accelerate burning if involved in a fire. Containers may explode when heated.
Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Use agent most appropriate to extinguish fire. Contact professional fire-fighters immediately.
Flash Point: Not available.
Autoignition Temperature: Not available.
Explosion Limits, Lower: Not available.

Upper: Not available.
NFPA Rating: (estimated) Health: 2; 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: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Provide ventilation. Do not use combustible materials such as paper towels to clean up spill. Clean up residual material by washing area with a 2-5% solution of soda ash.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid contact with clothing and other combustible materials. Avoid ingestion and inhalation.
Storage: Keep away from heat, sparks, and flame. Do not store near combustible materials. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Water	none listed	none listed	none listed
Potassium permanganate	0.2 mg/m3 TWA (as Mn) (listed under Manganese, inorganic compounds).	1 mg/m3 TWA (as Mn) (listed under Manganese compounds, n.o.s.).500 mg/m3 IDLH (as Mn) (listed under Manganese compounds, n.o.s.).	5 mg/m3 Ceiling (as Mn) (listed under Manganese compounds, n.o.s.).

OSHA Vacated PELs: Water: No OSHA Vacated PELs are listed for this chemical. 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 clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: purple
Odor: none reported
pH: Not available.
Vapor Pressure: 14 mm Hg
Vapor Density: 0.7
Evaporation Rate:>1 (ether =1)
Viscosity: Not available.
Boiling Point: 212 deg F
Freezing/Melting Point:32 deg F
Decomposition Temperature: Not available.
Solubility: Not available.
Specific Gravity/Density:1.0
Molecular Formula: Mixture
Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: High temperatures, ignition sources, dust generation, combustible materials.
Incompatibilities with Other Materials: Peroxides, aluminum, zinc, lead, copper, copper alloys, organic materials, sulfuric acid, glycerol, phosphorus, combustible organics, ammonium nitrate, dimethyl formamide, ethylene glycol, hydroxylamine, hydrogen trisulfide, antimony, ammonium salts, acids, sulfur, acetic acid, acetic anhydride, arsenites, bromides, iodides, hydrochloric acid, charcoal, ferric salts, mercurous salts, hypophosphites, sulfites, alcohols, rubber.
Hazardous Decomposition Products: Irritating and toxic fumes and gases, oxygen, oxides of potassium, oxides of manganese.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 7732-18-5: ZC0110000
CAS# 7722-64-7: SD6475000
LD50/LC50:
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;
.

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

Carcinogenicity:
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7722-64-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: No information found
Mutagenicity: No information found
Neurotoxicity: No information found
Other Studies:

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

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:	OXIDIZING LIQUID, N.O.S.	OXIDIZING LIQUID NOS (CONTAINS 16% POTASSIUM PERMANGA)
Hazard Class:	5.1	5.1
UN Number:	UN3139	UN3139
Packing Group:	III	II

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 7732-18-5 is listed on the TSCA inventory.
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.), 3.16%, (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# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
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

Risk Phrases:

R 22 Harmful if swallowed.
R 8 Contact with combustible material may cause fire.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 24/25 Avoid contact with skin and eyes.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 28B After contact with skin, wash immediately with plenty of water and soap.

WGK (Water Danger/Protection)

CAS# 7732-18-5: No information available.
CAS# 7722-64-7: 2

Canada - DSL/NDSL

CAS# 7732-18-5 is listed on Canada's DSL List.
CAS# 7722-64-7 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of C, D1B.
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: 7/08/1999
Revision #6 Date: 3/22/2006