



American International Chemical, Inc.

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MATERIAL SAFETY DATA SHEET

POTASSIUM PERMANGANATE

SECTION 1 - CHEMICAL PRODUCT AND COMPANY INFORMATION

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Revision Date: September 17, 2004

CAS #: 7722-64-7

DOT Hazard Class: Oxidizer UN 1490

SECTION 2 - COMPOSITION AND INFORMATION ON INGREDIENTS

Potassium Permanganate 97.5% min.

PEL - 5mg MN/m³ air

TLV Ceiling - 5 mg MN/m³ air

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Crystals of dark purple or bronze color, odorless. May be corrosive/irritating to eyes, skin and respiratory tract. May be harmful if swallowed. Material is an oxidizer. Although it is not combustible, it will accelerate the burning of combustible material.

POTENTIAL HEALTH EFFECTS:

Inhalation: Inhalation of potassium permanganate dust may cause irritation and damage to respiratory tract.

Skin Contact: Prolonged contact with solutions of potassium permanganate may irritate the skin. Prolonged contact with concentrated solutions and crystals of potassium permanganate at elevated temperatures is corrosive to skin.

Eye Contact: Potassium permanganate is corrosive to eye tissue and it may cause severe burns.

Ingestion: If swallowed, potassium permanganate may cause severe burns to mucous membranes of the mouth, throat, esophagus and stomach.

SECTION 3 - HAZARDS IDENTIFICATION cont'd

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EFFECTS OF OVEREXPOSURE:

Acute instantaneous overexposure to potassium permanganate may be irritating or corrosive to body tissues. While no cases of central nervous disorders due to chronic exposure to potassium permanganate have been reported, chronic overexposure to dust and fumes of manganese compounds, mainly manganese dioxide, in concentrations above the TLV-C value, may cause manganese poisoning.

Potassium permanganate will cause further irritation of tissue of open wounds, burns and mucous membranes.

Carcinogenicity: Not listed under OSHA, IARC, or NTP.

SECTION 4 - FIRST AID MEASURES

Eyes: Flush eyes immediately with large amounts of water for 15 minutes holding lids apart to ensure thorough flushing of entire surface. Do not use chemical antidotes and seek medical attention immediately.

Skin: Immediately wash areas which have been in contact with the substance with plenty of water. Remove clothing and footwear, which had been in contact with the substance and wash/clean clothing and footwear before use. If severe irritation occurs, seek medical attention immediately.

Inhalation: Get person out of the area where the substance was inhaled, to fresh air. If breathing has stopped, resuscitate and administer oxygen, if available. Seek medical attention immediately.

Ingestion: If person is conscious, give large quantities of water. Seek medical attention immediately. Do not ever give anything by mouth to an unconscious or convulsive person.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point: Not flammable

Flammable Limits: Not flammable

Extinguishing Media: Use large amounts of water.

Special Fire Fighting Procedures:

Keep at a safe distance from the fire to prevent risks of rapid burning. If yellow, white or brown fumes are generated, wear positive pressure breathing equipment and full protective clothing.

Unusual Fire Explosion Hazard:

The substance may decompose spontaneously if exposed to elevated temperatures (>150 °C) with emission of oxygen. May be explosive in contact with some other chemicals. May react violently with finely divided and readily oxidizable substances. Increases flammability of combustible materials.

Auto Ignition Temperature: Not flammable.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

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Clean spills immediately by sweeping or shovelling up the substance. Do not return contaminated substance to original drums, but transfer to clean, metal drums.

To clean contaminated floors, flush with abundant quantities of water into sewer, if permitted by environmental authorities. Otherwise, dike to collect water and treat chemically, as follows:

Reduce substance in aqueous solution with sodium thiosulfate ($S_2O_3Na_2$), a bisulfite or a ferrous salt solution. When using bisulfite or ferrous sulfate salts, some dilute sulfuric acid may be added to accelerate reduction. After reduction is complete, neutralize with sodium bicarbonate to neutral pH, if acid was used. Where permitted, the sludge can be drained into sewer with large quantities of water.

SECTION 7 - HANDLING AND STORAGE

Minimize dust generation when handling the substance and provide means to maintain exposure within accepted limits. Protect containers against physical damage. Store in a cool dry area in closed containers. Store the substance separated from acid, peroxides and all combustible or easily oxidizable materials.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

RESPIRATORY PROTECTION: Use NIOSH/MSHA approved respirators.

VENTILATION REQUIREMENTS: Ventilate as necessary to eliminate dust from the work area.

SKIN AND EYE PROTECTION:

Use rubber or neoprene gloves, chemical goggles and clothing sufficient to protect skin from dust.

WORK, HYGIENIC PRACTICES:

As required to protect skin and eyes from dust. Safety showers and/or eye wash should be available. Do not leave food or smoke in work area. Wash thoroughly and remove or clean any contaminated clothing.

EXPOSURE GUIDELINES: TLV - Ceiling - 5 mg MN/m³ air

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not Applicable

Vapor Pressure (MM Hg): Not Applicable

Vapor Density (AIR=1): Not Applicable

Specific Gravity (H₂O=1): 2.7 g per cm³ @ 20 °C

Percent Volatile by Volume (%): Not Applicable

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES cont'd

Melting Point: Decomposes at 240 °C

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Evaporation Rate (Butyl Acetate=1): Not Applicable

Solubility in Water: Complete

pH: Not Applicable

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal temperature of pressure.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposes at 240 °C with emission of oxygen. Decomposition products are alkaline. When involved in fire, corrosive fumes may be formed.

CONDITIONS TO AVOID:
Contact with incompatible materials or heat (>150 °C)

MATERIALS TO AVOID:
Avoid contact with acids, peroxides, and all combustible organic or readily oxidizable materials including inorganic oxidizable materials and metal powders. If in contact with hydrochloric acid, chlorine gas is liberated.

SECTION 11 - TOXICOLOGICAL INFORMATION

Potassium permanganate does not have any adverse toxicological effects. AIC's Potassium Permanganate is certified by the National Sanitation Foundation (NSF) of the USA for use in water for human consumption, after having passed complete toxicological test. Potassium Permanganate is not classified as a carcinogen.

RAT - LD₅₀ = 780 mg/kg Male (14 Days)
525 mg/kg Female (14 Days)

SECTION 12 - ECOLOGICAL INFORMATION

The main application for potassium permanganate is the treatment of drinking water and waste water. Potassium permanganate does not pose any danger to the environment.

The main by-product of the oxidation reaction of potassium permanganate is manganese dioxide (MnO₂), insoluble in water at pH values between 2 and 11.5, of brown to black color, biologically inert and easy to separate by settling and filtration.

SECTION 13 - DISPOSAL CONSIDERATIONS

Where permitted, wastes of potassium permanganate such as resulting from spills can be disposed of by land filling. Where this is not an acceptable procedure, wastes of potassium permanganate and solutions of potassium permanganate from floors flush can be energized as follows:

Reduce material in aqueous solution with sodium thiosulfite $S_2O_3Na_2$, a bisulfite or a ferrous salt solution. The bisulfite or ferrous salt may require some dilute sulfuric acid to promote rapid reduction. Neutralize with sodium bicarbonate to neutral pH if acid was used. Decant or filter and mix formed sludge with sodium carbonate and deposit in an approved landfill.

SECTION 14 - TRANSPORTATION INFORMATION

DOT HAZARD CLASS: Oxidizer - UN 1490, Class 5.1 Packing Group II

SECTION 15 - REGULATORY INFORMATION

CERCLA REPORTABLE REQUIREMENTS: (RQ) 100 lbs

SARA TITLE III INFORMATION:

Section 302 Extremely hazardous Substance: Unlisted

Section 313 Toxic Chemicals: Potassium Permanganate contains 97% Manganese compound and therefore is subject to the reporting requirements of Section 313, Title III.

Section 311/312 Hazard Category: Fire, Reactivity, AcuteHealth, Chronic Health

SECTION 16 - OTHER INFORMATION

Change to Section 15; Section 313.

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