

# MATERIAL SAFETY DATA SHEET

Revision #: 02

## Section 1 - Product Identification & Use

Product Name: **Potassium Permanganate**  
 Synonyms: Permanganate of potash  
 WHMIS Classification: Class C, Oxidizing Materials  
 Class E, Corrosive Materials  
 TDG Classification: Potassium Permanganate, Class 5.1, UN 1490, II  
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## Section 2 - Hazardous Ingredients

Hazardous Components	%(w/w)	C.A.S. No.	LD <sub>50</sub> & LC <sub>50</sub>
Potassium Permanganate	60-100	7722-64-7	(Oral, rat) 1090mg/kg

## Section 3 - Physical Data

Physical state: Solid metallic luster      Boiling point: N/A  
 Density: 2.7      Freezing point: >150°C  
 pH: N/A      Solubility in water: 6% @ 20°C  
 Vapour pressure: N/A      Evaporation rate: N/A  
**Odour & Appearance:** An odorless dark purple solid with metallic luster.

## Section 4 - Fire or Explosion Hazard

**Flammability:** The product is not considered to be flammable.  
**Extinguishing media:** Flooding amounts of water. Water will turn pink if in contact with potassium permanganate. Suffocating type extinguishers are not as effective as water. Do not use dry chemicals, CO<sub>2</sub>, Halon® or foams.  
**Hazardous Combustion Products:** Strong oxidizer. Powerful oxidizing agent: may ignite oxidizable materials. Contributes to combustible of other materials. Contact with other materials may cause fire and/or explosion. Contact with other material may form shock, heat or friction sensitive mixtures. May decompose spontaneously if exposed to intense heat. Container explosion may occur under fire conditions or when heated. Forms a detonable mixture with organic materials. May be sensitive to static discharge, particularly at elevated temperatures. The product is sensitive to impact. Emits toxic fumes under fire conditions. Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure build-up which could result in container rupture.

## Section 5 - Reactivity Data

**Stability:** Stable.  
**Incompatible substances:** Acids, organic materials, reducing agents, combustible materials, peroxides, readily oxidizable materials including inorganic oxidizable material and metal powders (antimony, arsenic, aluminum, zinc, lead, copper, and their alloys, etc.), alcohols, arsenites, bromides, iodides, sulfuric acid, hydrides, hypophosphites, hyposulfites, sulfites, hydrochloric acid, nitric acid, oxalates, carbides, hydrogen trisulfide, acetic acid, acetic anhydride, ferrous and mercurous salts, demethylsulfoxide, dimethylformamide, acetaldehyde, benzaldehyde, isobutyraldehyde, acetylacetone, oxalic acid, lactic acid, triethanolamine, mannitol, erythritol, aluminum carbide, acetone, aluminum nitrate, amines, ammonium nitrate, ammonium perchlorate, formaldehyde, glycerol, hydroxylamine, glycols, non-metals (carbon, sulfur, phosphorus, etc.), polypropylene, ethylene glycol, esters, dichloromethylsilane, trifluoroacetic anhydride.  
**Polymerization:** Will not occur.  
**Conditions to Avoid:** Avoid excessive heat, open flames and all ignition sources. Explodes when in contact with sulphuric acid, peroxides, nitric acid, alcohols, arsenic, phosphorous, sulphur, titanium and anhydrides. Contact with other incompatibles result in ignition and rapid burning.  
**Hazardous Combustion Products:** Contact with hydrochloric acid liberates chlorine. When involved in a fire, potassium permanganate may be liberating toxic fumes of manganese oxides and corrosive fumes.

## Section 6 - Toxicological Properties

**Carcinogenicity:** Not available  
**Inhalation:** Extremely destructive to tissues of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, and laryngitis, shortness of breath, headache, nausea and vomiting. May be fatal if inhaled.  
**Skin contact:** Contact of solutions at room temperature may be irritating to the skin, leaving brown stains. Concentrated solutions at elevated temperatures and crystals are damaging to the skin.  
**Eye contact:** Causes severe burning. May cause conjunctivitis and swelling. Corrosive to tissue and may cause severe eye damage and blindness.  
**Ingestion:** Causes burns to the mouth, throat and stomach. May cause headache, dizziness, nausea, and vomiting, gastrointestinal irritation and central nervous system depression. May cause liver and kidney damage. Generally ingestion of concentrations from 1% to 3% causes anemia and swelling of the throat with possible suffocation. Ingestion of concentration from 3% to 5% may cause kidney damage.

**Other health effects:** CORROSIVE EFFECTS ON THE SKIN AND EYES MAY BE DELAYED, AND DAMAGE MAY RESULT WITHOUT THE SENSATION OR ONSET OF ANY PAIN. STRICT ADHERENCE TO SAFETY AND IMMEDIATE FIRST AID FOLLOWING ANY EXPOSURE IS ESSENTIAL.

**Exposure limits:** OSHA PEL : Ceiling 5mg/m<sup>3</sup>

## Section 7 - Preventative Measures

**Personal Protective Equipment:** Avoid contact with skin and eyes. Wear chemical protective gloves, goggles and face shield, rubber apron and boots. Eye wash fountains and safety shower facilities should be provided nearby for emergency use.  
**Respiratory protection:** DO NOT USE chemical cartridge respirators with oxidizable sorbents. A NIOSH/MSHA-approved full facepiece air-purifying respirator equipped with cartridges for concentrations up to 2.0 mg/m<sup>3</sup>. The immediate dangerous to life and health value (IDLH) is 500 mg/m<sup>3</sup>.  
**Ventilation Requirements:** This product should be used in a well ventilated area at all times. If the solution is to be heated or a mist will be generated during product application, then local exhaust ventilation will be necessary.  
**Action to take for spills & leaks:** Minimize air borne spreading of dust. Wear respirator, protective clothing and gloves. Avoid dry sweeping. Do not use compressed air to clean up surfaces. Vacuuming is preferred. Return all material possible to container for proper disposal. Waste potassium permanganate can be converted into a less hazardous material by using a weak reducing agent such as sodium thiosulphate, bisulphates or ferrous salts, followed by neutralization with soda ash, or dilute HCl. Neutralization is expected to be an exothermic reaction. Restrict access to non-protected personnel. Comply with all government regulations on spill reporting, and handling and disposal of waste.  
**Disposal methods:** Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, provincial and local regulatory agencies to ascertain proper disposal procedures.  
**Note:** Empty containers retain residue and can be dangerous. Treat package in the same manner as the product, and are subject to proper waste disposal as mentioned above.  
**Storage & Handling Precautions:** Keep container tightly closed when not in use. Store upright in a cool, dry, well ventilated place away from incompatible materials.  
**Repair and Maintenance Precautions:** Do not cut, grind, weld or drill in, on or near this container.

## Section 8 - First Aid Measures

**If inhaled:** Remove victim to fresh air. Give artificial respiration if not breathing. Get immediate emergency medical attention. Keep patient warm and at rest.  
**In case of eye contact:** Immediately flush eyes with clean water for at least twenty (20) minutes, lifting the upper and lower eye lids to ensure complete flushing action of the eyeball. Get immediate emergency medical attention. Do not transport victim until the recommended flushing period has been completed, unless eye flushing can be carried out during transport.  
**In case of skin contact:** Immediately flush skin with plenty of clean running water for at least twenty (20) minutes. Remove contaminated clothing and shoes. Get immediate medical attention. Launder clothes before re-use.  
**In case of ingestion or swallowing:** If victim is conscious, dilute stomach contents by giving large amounts of water or milk. DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious victim. GET IMMEDIATE EMERGENCY MEDICAL ATTENTION.  
**Emergency Medical Care:** Hydroxide eye burns often go in three stages. An acute stage where early damage is sustained. A reparation stage when the eye begins to heal. Then a stage of later complications when a relapse may occur with more severe damage. Follow up care is essential.

## Section 9 - Preparation Information

Advance Chemicals Limited expressly disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose with respect to the product provided. The information contained herein is offered only as a guide to the handling of this specific product, and has been prepared in good faith by technically knowledgeable personnel. This M.S.D.S. is not intended to be all inclusive, and the manner and conditions of use may involve other and additional considerations.  
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