



LABORATORY CHEMICALS AND CONSUMABLES

# MATERIAL SAFETY DATA SHEET

## POTASSIUM PERMANGANATE

### 1. Chemical Product and Company information.

**Product name:** Potassium Permanganate

**Contact Information:**

Radchem cc  
PO Box 166982  
Brackendowns  
Alberton 1454  
Telephone : **011 867 3726 / 2864**

### 2. Hazard Identification

Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator). Possibly corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over exposure can produce lung damage, choking, unconsciousness or death. Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation.

### 3. Composition / information on ingredients

**CAS #:** 7722-64-7

**Synonym:** Potassium Permanganate, Biotech Grade

**Chemical Name:** Potassium Permanganate

**Chemical Formula:**  $\text{KMnO}_4$

### 4. First Aid Measures

**Eye Contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial



cream. Seek immediate medical attention.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious Inhalation:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

**Ingestion:** Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:** Not available

## **5. Fire-fighting measures**

**Flammability of the Product:** Non-flammable.

**Fire Hazards in Presence of Various Substances:** organic materials, metals, combustible materials

**Explosion Hazards in Presence of Various Substances:** Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Explosive in presence of organic materials, of metals.

**Fire Fighting Media and Instructions:** Not applicable

**Special Remarks on Fire Hazards:** Spontaneously flammable on contact with ethylene glycol. Potassium Permanganate being conveyed through propylene tube ignited the tube. When solid hydroxylamine is brought into contact with solid potassium permanganate, it is immediately preceded by a flame. Potassium permanganate decomposes hydrogen trisulphide so rapidly that sufficient heat is liberated to ignite the trisulphide. When Antimony or arsenic and solid potassium permanganate are ground together, the metals ignite.

**Special Remarks on Explosion Hazards:** Take care in handling as explosions may occur if it is brought in contact with organic or other readily oxidizable substances, either in solution or in dry state. Explosive in contact with sulphuric acid or hydrogen peroxide. Potassium permanganate + acetic acid or acetic anhydride can explode if permanganate is not kept cold. Explosions can occur when permanganates come on contact with benzene, carbon disulfide, diethyl ether, ethyl alcohol, petroleum, or organic matter. Contact with glycerol

## **6. Accidental release measures**

**Small Spill:** Use appropriate tools to put the spilled solid in a convenient waste disposal container.

**Large Spill:** Oxidizing material. Corrosive solid. Stop leak if without risk. Do not get water inside container. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Use water spray to reduce vapours. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

## **7. Handling and storage**

**Precautions:** Keep away from heat. Keep away from sources of ignition. Keep away from combustible material. Do not ingest. Do not breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as organic materials, metals, acids.

**Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids,



alkalise, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers.

### **8. Exposure controls/personal protection**

**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:** Splash goggles. Synthetic apron. Vapour and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:** Splash goggles. Full suit. Vapour and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

### **9. Physical and chemical properties**

**Physical state and appearance:** Solid

**Odour:** Odourless

**Taste:** Sweetish, astringent

**Colour:** Purple (Dark)

**Boiling Point:** Not available

**Melting Point:** Decomposes

**Critical Temperature:** Not available

**Specific Gravity:** 2.7 @ 15 C (Water = 1)

**Vapour Density:** Not available

**Volatility:** Not available

**Odour Threshold:** Not available

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water, methanol, and acetone.

**Solubility:** Easily soluble in methanol, acetone. Partially soluble in cold water, hot water. Soluble in Sulphuric Acid

### **10. Stability and reactivity**

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Incompatible materials

**Incompatibility with various substances:** Highly reactive with organic materials, metals, acids. Reactive with reducing agents, combustible materials.

**Corrosivity:** Not available.

**Special Remarks on Reactivity:** It is a powerful oxidizing agent. Incompatible with reducing agents, acids, formaldehyde, ammonium nitrate, dimethylformamide, glycerol, combustible materials, alcohols, arsenites, bromides, iodides, charcoal, organic substances, ferrous or mercurous salts, hypophosphites, hyposulfites, sulfites, peroxides, oxalates, ethylene glycol. Manganese salts in air oxidize the toxic sulphur dioxide to more toxic sulphur trioxide. Can react violently with most metal powders, ammonia, ammonium salts, phosphorous, many finely divided organic compounds (materials), flammable liquids, acids, sulphur.

**Special Remarks on Corrosivity:** Not available



**Polymerization:** Will not occur.

### **11. Toxicological information**

**Routes of Entry:** Absorbed through skin. Eye contact. Inhalation. Ingestion

**Toxicity to Animals:** Acute oral toxicity (LD50): 1090 mg/kg [Rat]. Lowest Published Lethal Dose: LDL [Woman] - Route: Oral; Dose: 100 mg/kg LDL [Human] - Route: Oral; Dose: 143 mg/kg.

**Chronic Effects on Humans:** MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, liver, skin, central nervous system (CNS).

**Other Toxic Effects on Humans:** Hazardous in case of skin contact (irritant), of eye contact (corrosive), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

**Special Remarks on Toxicity to Animals:** Not available

**Special Remarks on Chronic Effects on Humans:** May cause adverse reproductive effects (Male and Female fertility) based on animal data. May affect genetic material (mutagenetic) based on animal data.

**Special Remarks on other Toxic Effects on Humans:**

### **12. Ecological information**

**Ecotoxicity:** Not available

**BOD5 and COD:** Not available

**Products of Biodegradation:** Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

**Special Remarks on the Products of Biodegradation:** Not available

### **13. Disposal considerations**

**Waste Disposal:** Waste must be disposed of in accordance with federal, state and local environmental control regulations.

### **14. Transport information**

**DOT Classification:** CLASS 5.1: Oxidizing material

**Identification:** : Potassium permanganate UNNA: 1490 PG: II

**Special Provisions for Transport:** Not available

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