# Material Safety Data Sheet

**Potassium Permanganate Crystals** (RXSOL-60-6109-250)

## 1. Product and Company Identifaction

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| Product Name | **Potassium Permanganate** |
| Part Number | RXSOL-60-6109-250 |

**Chemical Formula: KMnO4**

**Company Details:**

RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
VASHI ,NEW BOMBAY 400703 INDIA

Stock Point : Mumbai, Kandla, Kolkata, Chennai, Visakhapatnam, Gandhidham, Nairobi

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|---|---|
| Phone | +91 22 65113333/ 5555 / 9999 / 27815540-42 |
| Fax | +91 22 2781 1318 :::AOH :0091 9821214367 |
| Email | **mail@rxmarine.com**; **123@rxmarine.com** |


## 2. Composition / informationon ingredients

| Chemical Name | Concentration | CAS Number | EC Number | R Phrases* | Symbols |
|---|---|---|---|---|---|
| Potassium Permanganate | 99-100% | 7722-64-7 | 231-760-3 | 50/5 | Xn |

*See Section 16

## 3. Hazards Identification

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| Physical hazards | Not Classified |
| Health hazards | Not Classified |
| Environmental Hazards | Aquatic Chronic 2 - H411 |
| Potential Acute Health Effects | 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. |
| Potential Chronic Health Effects | CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, skin, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. |

## 4. First Aid Measures

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| Contact with skin | 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. |
| Contact with eyes | 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. |
| 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 |
| Inhalation | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. |
| General | 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. |

## 5. Fire-fighting Measures

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| Flammability of the Product | : | Non-flammable |
| Auto-Ignition Temperature | : | Not applicable. |
| Flash Points | : | Not applicable. |

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| Flammable Limits | : | Not applicable. |
| Products of Combustion | : | Not applicable. |
| 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, there is produced immediately a with flame. Potassium permanganate decomposes hydrogen trisulfide so rapidly that sufficient heat is liberated to ignite the trisulfide. 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 sulfuric 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 oganic matter. Contact with glycero may produce explosion. Crystals of potassium permanganate explode vigorously when ground with phosphorous. A mixture of .5% potassium permanganate + ammonium nitrate explosive caused an explosion 7 hrs. later. Addition of Potassium permanganate + dimethylformamide to give a 20% solution led to an explosion after 5 min. During a preparation of chlorine by addition of the concentrated acid (Hydrochloric acid) to solid potassium permanganate, a sharp explosion occurred on one occasion. |

## 6. Accidental Release Measures

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| Personal Precautions | Wear protective clothing as per section 8. |
| Environmental Precautions | Avoid discharge into drains or watercourses or onto the ground. Contain spillage with sand,earth or other suitable non-combustible material. The product contains substances which are water-soluble and may spread in water systems. The product contains volatile substances which may spread in the atmosphere |
| Immediate Actions | Shut off source of leak if safe to do so. |
| 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 vapors. 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

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

## 8. Exposure controls and personal protection

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| Engineering Control | 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. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. |
| Personal Protection in case of Large Spill | Splash goggles. Full suit. Vapor 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. |
| Exposure Limits | TWA: 5 Consult local authorities for acceptable exposure limits. |

## 9. Physical and chemical properties

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| Odour | : | Odourless |
| Taste | : | Sweetish, astringent. |
| Appereance | : | Solid/Powder/Crystal |
| Molecular Weight | : | 158.03 g/mole |
| pH (1% soln/water) | : | Not available |
| Boiling Point | : | Not available |
| Melting Point | : | Decomposes. |
| Critical Temperature | : | Not available. |
| Specific Gravity | : | 2.7 @ 15 C (Water = 1) |
| Vapor Pressure | : | Not available. |
| Vapor Density | : | Not available. |
| Volatility | : | Not available. |
| Odor Threshold | : | Not available. |
| Water/Oil Coeff | : | Not available. |
| Ionicity (in Water): | : | Not available. |
| Solubility | : | Easily soluble in methanol, acetone. Partially soluble in cold water, hot water. Soluble in Sulfuric Acid |

## 10. Stability and reactivity

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| 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,<br>ferrous or mercurous salts, hypophosphites, hyposulfites, sulfites, peroxides, oxalates, ethylene glycol, Manganese salts in air oxidize the toxic sulfur dioxide to more toxic sulfur trioxide. Can react violently with most metal powders, ammonia, ammonium salts, phosphorous, many finely divided organic compounds (materials), flammable liquids, acids, sulfur. |
| Polymerization | : | Will not occur. |

## 11. Toxicological information

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| 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/kgLDL[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. |

## 12. Ecological information

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| Ecotoxicity | Not available |
| Mobility | Completely soluble in water |
| BOD5 and COD | Not available |

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| 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

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

## 14. Transport information

- Not classified as hazardous for transport
- DOT Classification: CLASS 5.1: Oxidizing material.
- Identification: : Potassium permanganate UNNA: 1490 PG: II
- Special Provisions for Transport: Not available.

## 15. Regulatory information

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| Federal and State Regulations | Connecticut carcinogen reporting list.: Potassium permanganate Illinois toxic substances disclosure to employee act: Potassium permanganate Illinois chemical safety act: Potassium permanganate New York release reporting list: Potassium permanganate Rhode Island RTK hazardous substances: Potassium permanganate Pennsylvania RTK: Potassium permanganate Massachusetts RTK: Potassium permanganate Massachusetts spill list: Potassium permanganate New Jersey: Potassium permanganate New Jersey spill list: Potassium permanganate Louisiana spill reporting: Potassium permanganate California Director's list of Hazardous Substances: Potassium permanganate |
| Other Regulations | **OSHA:** Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.<br>**Other Classifications**:<br>**WHMIS (Canada):**<br>**CLASS C**: Oxidizing material. CLASS E: Corrosive solid.<br>**DSCL (EEC):** R8- Contact with combustible material may cause fire. R22- Harmful if swallowed. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S60- This material and its container must be disposed of as hazardous waste. S61- Avoid release to the environment. Refer to special instructions/Safety data sheets. |
| HMIS (U.S.A.): | **Health Hazard: 2**<br>**Fire Hazard:** 0<br>**Reactivity:** 0<br>**Personal Protection**: j |
| National Fire Protection Association | **Health:** 1<br>**Flammability:** 0<br>**Reactivity:** 0<br>**Specific hazard:** NA |
| Protective Equipment: | Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles. |

## 16. Other information

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