

POTASSIUM PERMANGANATE

SECTION 1: CHEMICAL PRODUCT IDENTIFICATION

Product Name: POTASSIUM PERMANGANATE
Product Code: 2236
CAS#: 7722-64-7
Synonym: Not available
Chemical Name : POTASSIUM PERMANGANATE
Chemical Formula: KMnO_4
Formula Weight: 158.03

SECTION 2: COMPOSITION AND INFORMATION ON INGREDIENTS

Composition:

Name: Potassium Permanganate

Toxicological Data on Ingredients:

Oxidizing solids (Category 2), H272, R8
Acute toxicity, Oral (Category 4), H302, R22
Acute aquatic toxicity (Category 1), H400, R50.
Chronic aquatic toxicity (Category 1), H410, R50/53

SECTION 3: HAZARDS IDENTIFICATION

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: 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.

SECTION 4: FIRST AID MEASURES

Eye Contact: Flush eyes with water as a precaution.

Skin Contact: Wash off with soap and plenty of water.

Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Serious Inhalation: Never give anything by mouth to an unconscious person. Rinse mouth with water.

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

SECTION 5: FIRE AND EXPLOSION DATA

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Potassium oxides, Manganese/manganese oxides.

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of heat.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Explosive in presence of organic materials, of metals.

Fire Fighting Media and Instructions:

SMALL FIRE: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Spontaneously flammable on contact with ethylene glycol. Potassium Permanganate being conveyed through propylene tube ignited the tube. 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 permanganate.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Small Spill: Use personal protective equipment. Sweep up and shovel. Keep in suitable, closed containers for disposal

Large Spill: 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.

SECTION 7: HANDLING AND STORAGE

Precautions: Keep away from heat. Avoid formation of dust and aerosols. Keep away from sources of ignition. Empty containers pose a fire risk; evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents.

Storage: Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal Protection: Safety glasses, Lab coat, Dust respirator, Gloves. Be sure to use an approved/certified respirator or equivalent.

Personal Protection in Case of a Large Spill:

Splash goggles, Full suit, 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: 0.2 (mg(Mn)/m₃) from ACGIH (TLV) [United States].

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance Form	: Dark purple color crystalline powder
Taste	: Not available
Colour	: Dark purple
Odour	: Not available
Odour Threshold	: Not available
pH	: Not available
Melting point/freezing point	: Not available
Initial boiling point and boiling range	: Not available
Flash point	: Not available
Evaporation rate	: Not available
Flammability (solid, gas)	: Not available
Upper/lower flammability or explosive limits	: Not available
Vapour pressure	: Not available
Vapour density	: Not available
Relative density	: Not available
Water solubility	: Not available
Partition coefficient	: Not available
Auto-ignition temperature	: Not available

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, dust generation

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..

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, Ingestion.

Toxicity to Animals:

LD₅₀: Oral – rat – 1090 mg/kg

LC₅₀: Not available.

Chronic Effects on Humans: 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: LDL[Woman] - Route: Oral; Dose: 100 mg/kg
LDL[Human] - Route: Oral; Dose: 143 mg/kg.

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: Causes severe digestive (gastrointestinal) tract irritation with nausea, vomiting and possible burns. May affect respiration (hypoxia, dyspnea), cardiovascular system (hypertension, hypotension, tachycardia), liver (hepatitis, jaundice, hepatocellular necrosis), blood (methemoglobinemia), urinary



system (renal failure, albuminuria, hematuria, proteinuria, chemical burns), behavior/central nervous system (somnolence, headache, dizziness, tremor, paresthesia, fatigue, and even coma and death at high levels).

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:

LC₅₀: 0.769-1.27 mg/L, 96 hours [Fish (Oncorhynchus mykiss)]

1.08-1.38 mg/L, 96 hours [Fish (Oncorhynchus mykiss)]

2.3 mg/L, 96 hours [Fish (Lepomis macrochirus)]

2.7 mg/L, 96 hours [Fish (Lepomis macrochirus)]

2.97-3.11 mg/L, 96 hours [Fish (Cyprinus carpio)]

3.3-3.93 mg/L, 96 hours [Fish (Carassius auratus)].

BOD 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

SECTION 13: DISPOSAL CONSIDERATIONS

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

SECTION 14: TRANSPORT INFORMATION

UN number: 1490

IMO Class : 5.1

ADR/RID:

IMDG:

IATA:

UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

Transport hazard class(es)

ADR/RID:

IMDG:

IATA:

Packaging group: II

ADR/RID:

IMDG:

IATA:

Environmental hazards:

ADR/RID: No

IMDG Marine pollutant: No

IATA: No

SECTION 15: OTHER REGULATORY INFORMATION

Federal and State Regulations: TSCA 8(b) inventory: Potassium Permanganate.

Other Regulations: Not available.

Other Classifications:

WHMIS (Canada): CLASS C: Oxidizing material.

CLASS E: Corrosive solid.

DSCL (EEC):

R8/R22/R50.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 0

Reactivity: 0

Personal Protection: E



National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 0

Reactivity: 0

Specific hazard: Not Available.

Protective Equipment: Gloves, Lab coat, Safety glasses, Dust respirator - be sure to use an approved/certified respirator or equivalent

SECTION 16: OTHER INFORMATION

References: Full text of H AND R-Statements.

H272,R8 – May intensify fire; oxidiser.

H302, R22 – Harmful if swallowed.

H400, R50 – Very toxic to aquatic life.

H410,R50/53 – Very toxic to aquatic life with long lasting effects **Other Special Considerations:** Not available

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