

MSDS – Potassium Permanganate

MATERIAL SAFETY DATA SHEET (MSDS) / SAFETY DATA SHEET (SDS)

1. Identification

Product Name: Potassium Permanganate

Chemical Name: Potassium Permanganate

Synonyms: Condy's crystals

Chemical Formula: KMnO_4

Molecular Weight: 158.04 g/mol

Recommended Use: Oxidizing agent, disinfectant, laboratory reagent, water treatment

Restrictions on Use: Not for food or consumer use

2. Hazard(s) Identification

GHS Classification:

Oxidizing Solid – Category 2

Acute Toxicity (Oral) – Category 4

Skin Corrosion/Irritation – Category 2

Serious Eye Damage – Category 1

Specific Target Organ Toxicity (Repeated Exposure) – Category 2

Hazardous to the Aquatic Environment (Acute & Chronic) – Category 1

Signal Word: DANGER

Hazard Statements:

May intensify fire; oxidizer

Harmful if swallowed

Causes serious eye damage

Causes skin irritation

May cause damage to organs through prolonged or repeated exposure

Very toxic to aquatic life with long-lasting effects

3. Composition / Information on Ingredients

Component	CAS Number	Concentration
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Potassium Permanganate	7722-64-7	≥ 99%
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4. First-Aid Measures

Inhalation: Move to fresh air. Seek medical attention if symptoms occur.

Skin Contact: Remove contaminated clothing. Wash skin with soap and water. Seek medical attention if irritation persists.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Seek immediate medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Seek immediate medical attention.

5. Fire-Fighting Measures

Suitable Extinguishing Media: Water spray (large amounts)

Specific Hazards: Strong oxidizer; may intensify fire involving combustible materials

Hazardous Combustion Products: Manganese oxides, potassium oxides

Protective Equipment: Self-contained breathing apparatus and full protective gear

6. Accidental Release Measures

Evacuate area and ensure adequate ventilation

Avoid dust formation

Wear appropriate PPE

Collect material carefully using non-combustible tools
Prevent release into drains or waterways

7. Handling and Storage

Handling:

Avoid contact with skin, eyes, and clothing

Avoid inhalation of dust

Do not mix with organic materials, acids, reducing agents, or combustible substances

Storage:

Store in a cool, dry, well-ventilated area

Keep container tightly closed

Store away from heat and incompatible materials

8. Exposure Controls / Personal Protection

Exposure Limits (Manganese compounds):

OSHA PEL: 5 mg/m³ (ceiling)

ACGIH TLV: 0.1 mg/m³ (inhalable fraction)

Engineering Controls: Local exhaust ventilation

Personal Protective Equipment (PPE):

Safety goggles or face shield

Chemical-resistant gloves

Protective clothing

Dust respirator if exposure limits are exceeded

9. Physical and Chemical Properties

Appearance: Dark purple crystalline solid

Odor: Odorless

pH: Neutral to slightly alkaline (aqueous solution)

Melting Point: ~240 °C (decomposes)

Solubility: Soluble in water

Oxidizing Properties: Strong oxidizer

10. Stability and Reactivity

Stability: Stable under recommended storage conditions

Reactivity: Strong oxidizing agent

Incompatible Materials: Organic substances, acids, reducing agents, glycerol, sulfur, phosphorus

Hazardous Decomposition Products: Manganese oxides, oxygen

11. Toxicological Information

Routes of Exposure: Inhalation, ingestion, skin and eye contact

Acute Effects: Irritation, burns to skin and eyes, gastrointestinal distress

Chronic Effects: Nervous system effects with prolonged exposure to manganese compounds

Carcinogenicity: Not classified as carcinogenic

12. Ecological Information

Very toxic to aquatic organisms

Long-lasting environmental effects

Avoid environmental release

13. Disposal Considerations

Dispose of contents and container as hazardous waste

Follow local, regional, and national regulations
Do not discharge into sewer systems

14. Transport Information

UN Number: UN 1490

Proper Shipping Name: Potassium permanganate

Hazard Class: 5.1 (Oxidizer)

Packing Group: II

15. Regulatory Information

Regulated as a hazardous oxidizing substance

Subject to workplace exposure and environmental regulations

16. Other Information

Prepared for: Educational and reference use

Revision Date: [15th September 2025]