



## CAIROX<sup>®</sup> POTASSIUM PERMANGANATE PHARMA GRADE

CAS Registry No. 7722-64-7

Pharma Grade is recommended where potassium permanganate purity of 99% is required, or where a specific particle size is required. Applications include organic synthesis, pharmaceutical production, and other industrial type applications.

### PHARMA GRADE

This grade meets the purity specifications of the United States Pharmacopeia, but is not USP certified.

**Assay:** Pharma Grade is guaranteed 99% minimum  $\text{KMnO}_4$

**Weight Loss:**  $\leq 0.5\%$

**Insoluble:**  $\leq 0.2\%$

### CHEMICAL/PHYSICAL DATA

<b>Formula:</b>	$\text{KMnO}_4$
<b>Formula Weight:</b>	158.0 g/mol
<b>Form:</b>	Granular Crystalline
<b>Specific Gravity:</b>	
Solid	2.703 g/cm <sup>3</sup>
3% Solution	1.020 g/mL by weight, 20°C / 4°C
<b>Bulk Density:</b>	Approximately 100 lb/ft <sup>3</sup>
<b>Decomposition:</b>	May start at 150 °C / 302 °F

### SOLUBILITY IN DISTILLED WATER

Temperature		Solubility	
°C	°F	g/L	oz/gal
0	32	27.8	3.7
20	68	65.0	8.6
40	104	125.2	16.7
60	140	230.0	30.7
70	158	286.4	38.3*
75	167	323.5	43.2*

For more information, refer to the Solubility Fact Sheet.  
\*Extrapolated

### SHIPPING CONTAINERS

25 kg pail (55.125 lb) net, with handle, made of HDPE, weighs 2.9 lbs (1.3 kg). It is tapered to allow nested storage of empty drums, stands approximately 15.9 inches (40.4 cm) high and has a maximum diameter of 12.4 inches (31.5 cm).

### DESCRIPTION

Crystals or granules are dark purple with a metallic sheen, sometimes with a dark bronze-like appearance. Potassium permanganate has a sweetish, astringent taste and is odorless. It is soluble in water and sparingly soluble in such organic solvents as acetone and glacial acetic acid (slow decomposition). Through the use of phase transfer agents it can also be made soluble in benzene and methylene chloride.

### HANDLING, STORAGE & INCOMPATIBILITY

Protect containers against physical damage. When handling potassium permanganate, respirators should be worn to avoid irritation of or damage to mucous membranes. Eye protection should also be worn when handling potassium permanganate as a solid or in solution.

Store in accordance with NFPA 400 Hazardous Materials Code requirements in the United States.

Potassium permanganate is stable and will keep indefinitely if stored in a cool, dry area in closed containers. Concrete floors are preferred to wooden decks. To clean up spills and leaks, follow the steps recommended in the SDS. Be sure to use goggles, rubber gloves, and respirator when cleaning up a spill or leak.

Avoid contact with acids, peroxides, and all combustible organic or readily oxidizable materials including inorganic oxidizable materials and metal powders. With hydrochloric acid, chlorine gas is liberated. Potassium permanganate is not combustible, but will support combustion. It may decompose if exposed to intense heat.

Fires may be controlled and extinguished by using large quantities of water. Refer to the SDS for more information.

## CORROSIVE PROPERTIES

Potassium permanganate is compatible with many metals and synthetic materials. Natural rubbers and fibers are often incompatible. Solution pH and temperature are also important factors. The material must be compatible with either the acid or alkali also being used.

In neutral and alkaline solutions, potassium permanganate is not corrosive to iron, mild steel, or stainless steel; however, chloride corrosion of metals may be accelerated when an oxidant such as permanganate is present in solution. Plastics such as polypropylene, polyvinyl chloride Type I (PVC I), epoxy resins, fiberglass reinforced plastic (FRP), Penton, Lucite, Viton A, and Hypalon are suitable. Teflon FEP and TFE, and Tefzel ETFE are best. **Refer to Material Compatibility Chart.**

Aluminum, zinc, copper, lead, and alloys containing these metals may be (slightly) affected by potassium permanganate solutions. **Actual studies should be made under the conditions in which permanganate will be used.**

## REPACKING

When potassium permanganate is repacked, the packing, markings, labels, and shipping conditions must meet applicable Federal regulations. See Code of Federal Regulations-49, Transportation (parts 100-199) and Federal Hazardous Materials Substances Act, 15 U.S.C. 1261.

## SHIPPING

Potassium Permanganate is classified according to the U.S. Department of Transportation (HMR 49 CFR Part 172) as an oxidizer.

<b>Proper Shipping Name:</b>	Potassium Permanganate (RQ-100 lb/45.4 kg)
<b>Hazard Class:</b>	Oxidizer
<b>Identification Number:</b>	UN 1490
<b>Label Requirements:</b>	Oxidizer
<b>Packaging Requirements:</b>	49 CFR Parts 100 to 199

## APPLICATIONS

Listed below are some of the many applications of potassium permanganate. Permanganate is a powerful oxidizing agent. The optimum condition under which it is to be used can be easily established through technical service evaluations or laboratory testing.

- Municipal Wastewater Treatment
- Industrial Wastewater Treatment
- Metal Surface Treatment
- Equipment Cleaning
- Purification of Gases
- Mining & Metallurgical
- Hazardous Waste Treatment or Remediation
- Slag Quenching
- Food Processing



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