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EINECS Reference No.  
231-760-3, No. 025-002-9  
CAS Registry No 7722-64-7

POTASSIUM PERMANGANATE  
ACS REAGENT GRADE

ACS (American Chemical Society) Reagent Grade is recommended where the highest potassium permanganate purity is required. Typical reagent grade applications include laboratories and electronics.

## FREE-FLOWING GRADE

### Assay

Guaranteed 99%  $\text{KMnO}_4$

### Particle Size

On request

### Standards and Specifications

Reagent Grade conforms to the ACS Specifications given in Reagent Chemicals, 11th Edition, 2016.

## 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>

Decomposition 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 2.1lbs (.95 kg). It is tapered to allow nested storage of empty drums, stands approximately 15.6 inches (39.7 cm) high and has a maximum diameter of 12.3 inches (31.2 cm).

**Special Packages** will be considered on request.

Packaging meets UN performance oriented packaging requirements.

## 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, AND 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.

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.



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### CORROSIVE PROPERTIES

potassium permanganate ACS Reagent Grade 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 potassium 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 the product will be used.

### SHIPPING

ACS Reagent grade is classified by the Hazardous Materials Transportation Board (HMTB) as an oxidizer. It is shipped under Interstate Commerce Commission's (ICC) Tariff 19.

**Proper Shipping Name:** Potassium Permanganate  
(RQ-100/45.4)

**Hazard Class:** Oxidizer

**Identification Number:** UN 1490

**Label Requirements:** Oxidizer

**Packaging Requirements:** 49 CFR Parts 100 to 199,

**Sections:** 173.152, 173.153, 173.194

#### Shipping Limitations:

Minimum quantities:

Rail car: See Tariff for destination

Truck: No minimum

### APPLICATIONS

Listed below are some of the many applications of ACS Reagent 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.

- Oxidation and Synthesis
- Laboratory Reagent