AQUOX® POTASSIUM PERMANGANATE TECHNICAL GRADE

CAS Registry No. 7722-64-7 & EINECS Reference No. 231-760-3 Municipal Drinking Water Data Sheet

AQUOX potassium permanganate technical grade is recommended where potassium permanganate is fed as a solution and where particle size is not critical.

TECHNICAL GRADE

Assay: Guaranteed ≥98.5% $KMnO_4$

Particle Size:

20% maximum retained on #425 U.S. Standard Sieve (formerly #40)

7% maximum through #75 U.S. Standard Sieve (formerly #200)

Water Insolubles, %m/m: ≤1.0

Moisture, %m/m: ≤0.5

Standards & Specifications for Technical Grade: EN-12672

CHEMICAL/PHYSICAL DATA

Formula: $KMnO_4$

Formula Weight: 158.0 g/mol

Form: Granular Crystalline

Specific Gravity:

Solid: 2.703 g/cm^3

3% Solution: 1.020 g/mL by weight, 20°C / 4°C

Bulk Density: Approximately 1600 kg/cm^3

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*.

DESCRIPTION

Crystals or granules are dark purple with a metallic sheen, sometimes with a dark bronze-like appearance. AQUOX potassium permanganate is odorless.

HANDLING, STORAGE & INCOMPATIBILITY

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

Store in accordance with the European Fire Association in Europe for Class II oxidizers. Additional regulations in Europe are REACH (Regulation for Registration, Evaluation, Authorization and Restriction of Chemicals), and CLP (Classification, Labeling, Packaging). REACH is a regulation that increases the responsibility of the industry to manage the risks that the chemical may pose. For REACH registration numbers, refer to the eSDS. Check local regulations to ensure proper storage.

AQUOX 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 Safety Data Sheet (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. AQUOX 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 Safety Data Sheet (SDS) for more information.**

CORROSIVE PROPERTIES

AQUOX® 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. 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 AQUOX solutions. **Actual studies should be made under the conditions in which the product will be used.**

APPLICATIONS

Listed below are some of the many applications of AQUOX Permanganate as 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 & Synthesis
- Water Treatment
- Municipal Wastewater Treatment
- Industrial Wastewater Treatment
- Metal Surface Treatment
- Equipment Cleaning
- Purification of Gases
- Mining & Metallurgical
- Slag Quenching
- Food Processing

SHIPPING

Potassium Permanganate is classified as an oxidizer according to International Maritime Dangerous Goods Code (IMDG Code), Agreement Concerning the International Carriage of Dangerous Goods by road (ADR) and the Regulations concerning the International Carriage of Dangerous Goods by Rail (RID).

Proper Shipping Name:	Potassium Permanganate (RQ 45.4 kg)
Hazard Class:	Oxidizer
Identification Number:	UN 1490
Label Requirements:	Oxidizer
Packaging Requirements:	ADR - Volume II - Part 4

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).

150 kg drum (330.75 lb.) net, made of 22-gauge steel, weighs 25.3 lbs. (11.5 kg). It stands approximately 28.4 in. (72.2 cm) high and is approximately 19.7 in. (50.0 cm) in diameter.

Packaging meets UN performance oriented packaging requirements.

Packaging weight tolerance +/-1%.

Other containers may be available.

REPACKING

When AQUOX potassium permanganate is repacked, the packing, markings, labels, and shipping conditions must meet applicable federal regulations.

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