

## LIQUOX® SODIUM PERMANGANATE

CAS Registry No. 10101-50-5 EINECS Reference No. 233-251-1 Data Sheet

LIQUOX sodium permanganate is a liquid oxidant recommended for use in electronics and fine chemical synthesis that require a concentrated permanganate solution.

### PRODUCT SPECIFICATION

Assay:	40–41% as $\text{NaMnO}_4$
pH:	5.0–8.0
Specific Gravity:	1.37–1.40
Insolubles:	$\leq 0.005\%$

### CHEMICAL/PHYSICAL DATA

Formula:	$\text{NaMnO}_4$
Appearance:	Deep purple solution
Shelf Life:	This product should be used within two years of the date of production
Decomposition:	May start at $150^\circ\text{C}$ / $302^\circ\text{F}$

### SOLUBILITY IN DISTILLED WATER

- Desmearing/Etchback: Printed circuit board desmearing and etchback.
- Oxidation and Synthesis: Organic chemicals and intermediates manufacture. Oxidizes impurities in organic and inorganic chemicals.

### BENEFITS

- Concentrated liquid oxidant
- More precise dosing of chemical
- Feed equipment is simplified
- Consistent concentration
- Dust problems are eliminated
- High solubility at room temperature
- Can be used whenever potassium ion cannot be tolerated

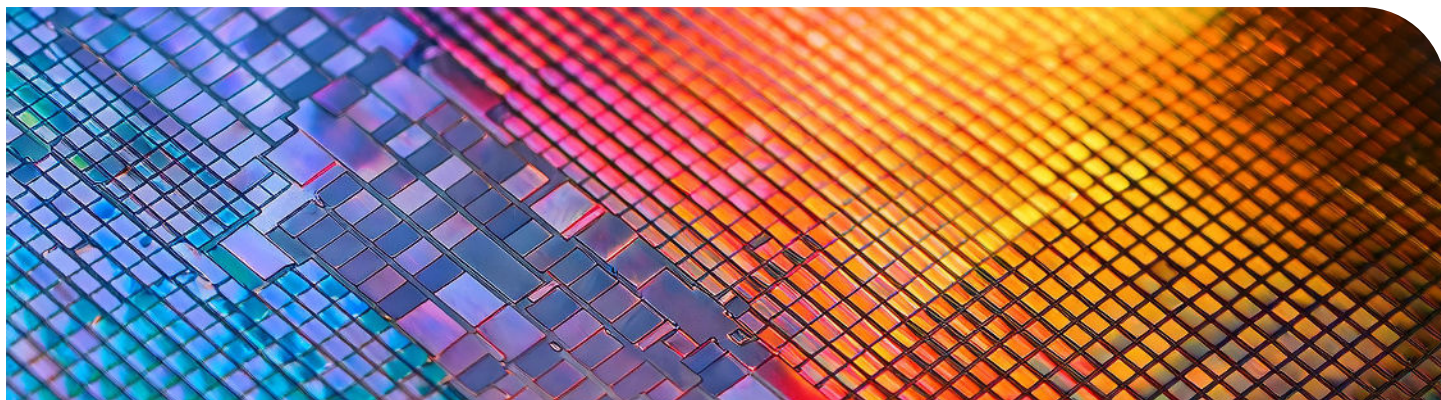
### HANDLING, STORAGE & INCOMPATIBILITY

Like any strong oxidant, LIQUOX sodium permanganate should be handled with care. Protective equipment during handling should include face shields and goggles, rubber or plastic gloves, rubber or plastic apron. If clothing comes into contact with sodium permanganate, wash off immediately; spontaneous ignition can occur with cloth or paper. In cases where significant exposure exists, use of the appropriate NIOSH/MSHA dust or mist respirator or an air supplied respirator is advised.

Store in accordance with NFPA (National Fire Protection Association) Code 400 Hazardous Materials Code, Chapter 15 - Oxidizer Solids and Liquids in the United States or the European Fire Protection Association in Europe for Class II oxidizers.

The product should be stored in a cool, dry area in closed containers. Concrete floors are preferred. Avoid wooden decks. Spillage should be collected and disposed of properly. Contain and dilute spillage to approximately 6% with water, and then reduce with sodium thiosulfate, a bisulfite, or ferrous salt solution. The bisulfite or ferrous salt may require some dilute sulfuric acid (10% w/w) to promote reduction. Neutralize with sodium carbonate to neutral pH, if acid was used. Deposit sludge in an approved landfill or, where permitted, drain into sewer with large quantities of water. As an oxidant, the product itself is non-combustible but will accelerate the burning of combustible materials. Therefore, contact with all combustible materials and/or chemicals must be avoided. These include but are not limited to: wood, cloth, organic chemicals, and charcoal. Avoid contact with acids, peroxides, metal powders, sulfites, oxalates, and all other oxidizable inorganic chemicals. Contact with sulfuric acid, peroxides, or metal powders may result in an explosion. During contact with hydrochloric acid, chlorine gas is liberated. Additionally, avoid contact with reducing agents (e.g., sulfites, oxalates, etc.) as they can cause violent reactions. **Consult the Safety Data Sheet (SDS) for additional safety information.**





## SHIPPING

LIQUOX® sodium permanganate is classified and listed as an oxidizer by PHMSA (Pipeline and Hazardous Materials Safety Administration), Department of Transportation, in 49 CFR Subchapter C, HMR (Hazardous Materials Regulation), Part 172.101 HMT (Hazardous Materials Table).

**Proper Shipping Name:** Permanganates, inorganics, aqueous solution n.o.s. (contains sodium permanganate).

**Hazard Class:** 5.1

**Identification Number:** UN 3214

**Packaging Group:** II

**Label Requirements:** Oxidizer, 5.1

**Packaging Requirements:** 49 CFR Parts 171 to 180

**Sections:** 173.152, 173.202, 173.242

## COMPATIBILITY INFORMATION

LIQUOX sodium 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 selected for use with liquid permanganate must also be compatible with any kind of acid or alkali being used.

In neutral and alkaline solutions, liquid permanganate is not corrosive to carbon steel and 316 stainless steel; however, chloride corrosion of metals may be accelerated when an oxidant such as liquid permanganate is present in solution. Plastics such as Teflon™, polypropylene, and HDPE are also compatible with liquid permanganate.

Aluminum, zinc, copper, lead, and alloys containing these metals may be (slightly) affected by liquid permanganate solutions. Actual corrosion or compatibility studies should be made under the conditions in which permanganate will be used prior to use.

## SHIPPING CONTAINERS

### 5 gallon Pail (20-L)

Made of high-density polyethylene (HDPE).

**Weighs 3.3 lbs. (1.5 kg). The net weight is 57 lbs. (25.9 kg).**

The pail stands approximately 14.8 in. (37.6 cm) tall, 10.6 in. (26.9 cm) wide, and 11.0 in. (27.9 cm) deep. (Domestic and international). Weight tolerance +/-3%.

### 55 gallon Drum (208-L)

Made of high-density polyethylene (HDPE).

**Weighs 21 lbs. (9.5 kg). The net weight is 550 lbs. (250 kg).**

The drum stands approximately 34.8 in. (88.3 cm) tall, has an outside diameter of 23.3 in. (59.1 cm). (Domestic and international). Weight tolerance +/-1%.

### 275 gallon IBC (Intermediate Bulk Container) (1040-L)

**IBC weighs 123 lbs. (55.8 kg). The net weight is 3000 lbs. (1360 kg).**

The IBC contains 263 gallons (1000 L) of product. The IBC dimensions are 45.3 in. (114.9 cm) high, 47.3 in. (120.0 cm) long, and 39.4 in. (100.0 cm) wide. The IBC has a 2 in. (5 cm) butterfly valve with NPS threads in bottom sump. (Domestic). Weight tolerance +/-1%.

**Bulk Shipping** quantities from 3,000-3,800 gallons are available.

Other containers may be available.



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Rev. 2/2025