

Sodium Permanganate Liquid 40% Solution Information Sheet

USAGE & DESCRIPTION

Sodium permanganate has broad applications, from water treatment to fine chemical synthesis.

CAP Remediation specializes in the application of sodium permanganate in soil and groundwater treatment.

In addition to off-the-shelf 40% and 20% solutions, CAP Remediation offers sodium permanganate in custom, pre-blended solutions of 5-15% in bulk tankers or IBC totes.

This eliminates many of the health and safety issues associated with on-site mixing.

SPECIFICATIONS

Assay 40% minimum as NaMnO₄
pH 5.0 - 8.0

Specific Gravity 1.36 - 1.39

Solubility in Water Miscible with water in all proportions.

Standards and Specifications

CAP Remediation's Sodium Permanganate meets the following standards:

AWWA Standard B603-10
EN: 15482 - 10 mg/L max
ANSI/NSF 60

NSF Maximum Use Level 176 mg/L

CHEMICAL & PHYSICAL PROPERTIES

Formula NaMnO₄

Appearance Dark purple liquid solution

Stability 18 months

Insolubles <0.005 %

PACKAGING

5-gallon (20-L) Jerrican

(UN Specification: UN3H1/Y1.8/100)

Made of high density polyethylene (HDPE).

Weights 3.3 lb (1.5 kg). The net weight is

48.5 lb (22 kg). The jerrican stands approximately

13.4 in. tall, 9.4 in. wide, and 13.0 in. deep (33.9

cm high, 23.8 cm wide, and 33.0 cm. deep).

The net weight is 57 lb (25.7 kg).

55-gallon (208.2L) Closed Head HDPE Drum

(UN Specifications: UN1H1/Y1.9/100) Made of

high density polyethylene (HDPE).

Weights 22 lbs (10 kg). The net weight is 550 lbs

(249.5 kg). The drum stands approximately 34.5

in. tall, has an outside diameter of 23.4 in. (89.1

cm tall, OD 59.4 cm)

275-gallon (1000 L nominal capacity) IBC (Intermediate Bulk Container)

UN Packing Code: UN31HA1 Packing Group II (Y)

Weights 125.66 lb (57 kg). The net weight is 3000

lb (1160 kg). The tote contains 263 gallons of

product. The dimensions are 46.3 (117.5 cm)

high, 39.4 in. (100.0 cm) long, and 47.3 in. (120.0

cm) wide.

Bulk tanker transport available up to 4200 gallons

HANDLING & STORAGE

Always refer to the SDS for proper handling of sodium permanganate.

Protective equipment should be worn during handling, this includes face shields/goggles, and gloves/apron of plastic or rubber. If any sodium permanganate gets on clothing, wash it off immediately as spontaneous ignition can occur with cloth or paper. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

If significant exposure occurs, it is recommended to use the appropriate NIOSH-MSHA dust or mist respirator.

Store in accordance with NFPA (National Fire Protection Association) Code 430 requirements for Class II Oxidizers. The product should be stored in a cool, dry area in closed containers. Preferably store on concrete floors and avoid wooden decks due to the potential for acceleration of combustion. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Segregate from acids, peroxides, formaldehyde, and all combustible, organic, or easily oxidized materials.

Sodium permanganate is itself non-combustible, but will accelerate the burning of combustible materials and/or chemicals. These include but are not limited to: cloth, charcoal, wood, and organic chemicals. Always refer to the SDS for complete safety information.

Contain spill by collecting the liquid in a pit or holding behind a dam. Dilute to approx. 6% solution with water and then reduce with sodium thiosulfate, a bisulfite, or ferrous salt solution. Flush with abundant water into the sewer if permitted by federal, state, and local authorities. If not, collect and treat as above.

FREIGHT/SHIPPING

Liquid 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, Hazardous Materials Regulation, Part 172.101 Hazardous Materials Table.

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

Hazard Class 5.1

Identification Number UN 3214

COMPATIBILITY

Liquid sodium permanganate is compatible with many metals and synthetic materials. Natural rubbers and fibers are often incompatible. Important factors pertaining to compatibility with permanganates include temperature and solution pH. Materials used must be compatible with either the acid or alkali also being utilized.

In neutral and alkaline solutions, sodium 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 sodium permanganate solutions. Actual corrosion or compatibility studies should be made under the conditions in which permanganate will be used prior to use.