



RemOX® L ISCO REAGENT

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

RemOX® L ISCO reagent has been specifically manufactured for environmental applications such as remediation of soils and associated groundwater. This product can be used to degrade a variety of contaminants including chlorinated solvents, polyaromatic hydrocarbons, phenolics, organo-pesticides, and substituted aromatics. RemOX L is shipped with a certificate of analysis to document assay, pH, and trace metals.

PRODUCT SPECIFICATIONS

Assay:	39.5–41.0% as sodium permanganate (NaMnO ₄)
pH:	5.0-8.0
Trace Metals:	(see Table 1)

CHEMICAL/PHYSICAL DATA

Form:	NaMnO ₄
Formula Weight:	141.93 g/mol
Appearance:	Dark purple solution
Specific Gravity:	1.365–1.385
Freezing Point:	-15°C / 5°F
Solubility in Water:	Miscible with water in all proportions. Material will pass through a 10 micron filter.

APPLICATIONS

RemOX L is used for soil and groundwater remediation by in situ or ex situ chemical oxidation for treatment of chlorinated ethenes, phenolic compounds, polyaromatic hydrocarbons, RDX, HMX, and various pesticides.

HANDLING, STORAGE & INCOMPATIBILITY

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

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. 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. The product should be stored in a cool, dry area in closed containers. Concrete

HANDLING, STORAGE & INCOMPATIBILITY con't

floors are preferred. Check local regulations to ensure proper storage. Avoid wooden decks. Spillage should be collected and disposed of properly. To clean up spills and leaks follow the steps recommended in our Safety Data Sheet (SDS) or eSDS. 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. RemOX L 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 or eSDS for more information.**

COMPATIBILITY INFORMATION

RemOX L 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 be compatible with any kind of acid or alkali being used.

In neutral and alkaline solutions, RemOX L 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 RemOX L. Actual corrosion or compatibility studies should be made under the conditions in which RemOX L will be used.



SHIPPING

RemOx® L ISCO reagent 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

SHIPPING CONTAINERS

5 gallon jerrican (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 jerrican stands approximately 14.8 inches (37.6 cm) tall, 10.6 inches (26.9 cm) wide, and 11.0 inches (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 inches (88.3 cm) tall, has an outside diameter of 23.3 inches (59.2 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. (1361 kg). The IBC contains 263 gallons (996 L) of product. The IBC dimensions are 45.3 inches (114.9 cm) high, 47.3 inches (120.0 cm) long, and 39.4 inches (100.0 cm) wide. The IBC has a 2 inch (5 cm) male butterfly valve with NPS threads in bottom sump. (Domestic and international) Weight tolerance +/-1%.

Bulk Quantities up to 4000 gallons (15,142 L) are available. (Domestic only) Weight tolerance +/-10%.

TABLE 1: TYPICAL TRACE METAL CONTENT & SPECIFICATIONS

Element	Typical analysis (mg/kg)	Specifications (mg/kg)	DL* (mg/kg)	Element	Typical analysis (mg/kg)	Specifications (mg/kg)	DL* (mg/kg)
Ag	BDL**	0.15	0.034	Fe	BDL	2.00	0.053
Al	BDL	2.00	0.24	Hg	BDL	0.03	0.003
As	BDL	4.00	0.006	Ni	BDL	0.1	0.03
Ba	2.96	15.00	0.016	Pb	BDL	0.70	0.16
Be	BDL	0.50	0.08	Sb	BDL	0.70	0.16
Cd	BDL	0.10	0.016	Se	0.19	0.50	0.0003
Cr	3.2	10.00	0.031	Tl	BDL	3.50	0.80
Cu	BDL	0.10	0.022	Zn	BDL	0.40	0.011

DL* = detection limit BDL** = below detection limit



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