



MTS[®]
METALS TREATMENT SOLUTION

Metals Treatment Solutions

Chemistry for sustained and reliable heavy metals remediation

Benefits Include

Reduce Leachable concentrations of metals

Applicable in soil piles and insitu applications for groundwater treatment

Economical solution compared to other available products

Soluble solutions available for better injection ROI

Proven Field Applications

Excavation-treat-reuse onsite for impacted soils

Direct Push Injection into groundwater zone

Slag and other metals residual treatment applications

Improved performance of solidification applications utilizing cement for more sustainable results

Applicable to Heavy Metals Treatment including:

Aluminum (Al)

Arsenic (As)

Boron (B)

Cadmium (Cd)

Cobalt (Co)

Copper (Cu)

Hexavalent Chromium (CrVI)

Lead (Pb)

Mercury (Hg)

Nickel (Ni)

Selenium (Se)

Thallium (Th)

Zinc (Zn)

Uranium (Ur)

Among others

Applicable to Other COCs:

Fluoride

Cyanide

Industrial Slag / Waste

Advanced formulation of engineered stabilization chemistries for the use in chemical reduction or sequestration of heavy metals in soil and groundwater remediation application. Decades of metals chemical reduction and sequestration remediation experience have culminated into the MTS[®] product group comprised of the following components depending upon target contaminants.

<u>Material</u>	<u>CAS No.</u>	<u>Physical Properties</u>
Magnesium Oxide	1309-48-4	Form: Powder and liquid solutions
Magnesium Hydroxide	1309-42-8	Density: 1.2 – 3 g/cm ³
Ferrous Sulfate	7782-63-0	Odor: Slightly acrid / acidic
Iron Powder	7439-89-6	Solubility in water: Some components are insoluble
Activated Carbon	7440-44-0	Color: variable
Zeolite Ion Exchange	12173-10-3	Vapor Pressure: N/A
Calcium Carbonate	471-34-1	
Iron Sulfide ("Mackinawite")		
Sulfide Complex (proprietary)		
Phosphate Complex (proprietary)		

For In-Situ and Ex-Situ Remediation, Landfill, Mining, and Industrial Applications:

Each of the MTS[®] chemistries are proprietary and site-specific engineered formulations of chemical reduction chemistries for use in chemical sequestration and immobilization of heavy metals as a stand-alone remediation solution or in combination with stabilization and solidification applications.

Decades of heavy metals chemical reduction remediation and sequestration experience have culminated into the Metals Treatment Solution (MTS[®]) product group comprising multiple proprietary engineered chemistries that target many heavy metal contaminants.

MTS[®] chemically binds metal ions in the free liquids and immobilizes them within the soil / substrate thereby reducing their solubility through the chemical reaction. The physical characteristics of the chemically reduced or sequestered contaminated material is not changed by this process with respect to geotechnical properties for redevelopment. It also does not interfere with biological systems or native biota if shallow enough to be in the root zone.

Technical design support, references, papers, and reliable customer service available to all customers.