



Metals Treatment Solution- Magnesium Oxide Chemistry for sustained heavy metals stabilization and remediation

Benefits Include:

Reduce Leachable concentrations of metals

Applicable in soil piles and in-situ applications for groundwater treatment

Economical solution compared to other available products

Alkaline chemistry for pH modifications or alkaline precipitation

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:

- Cadmium (Cd)
- Cobalt (Co)
- Copper (Cu)
- Lead (Pb)
- Zinc (Zn)

Other applications include:

- Industrial Slag / Waste
- Mining residual

CERES offers high performing Magnesium oxide (MgO) which is increasingly utilized for the remediation of heavy metals in soil and groundwater. MgO offers unique chemical and physical properties including alkaline chemistries to raise the pH, adsorption capacity, and reactivity with other inorganic compounds resulting in coprecipitation mechanisms with select contaminants.

<u>MgO Options</u>	<u>MgO Content</u>	<u>Applications</u>
Ultra-Fine Powder	97-98%	Groundwater Injection, high reactivity
Fine to Granular Powder	94-95%	Soil mixing or injection

<u>Physical Properties</u>	<u>Density</u>	<u>Solubility</u>	<u>Particle Size</u>
Ultra-Fine Powder	0.75-1 g/cm ³	NA, water	5-74 μ m
Fine to Granular	0.75-1 g/cm ³	NA, water	74-300 μ m

Color: white

For Mining, Industrial and Environmental Applications:

Stabilization and/or Solidification of heavy metals impacted soil and groundwater is a remedial technology that has been employed for many years around the world by highly specialized remediation engineers who understand the chemistry well and its application.

Stabilization is a process where chemical reagents (i.e. MTS[®]) are applied or injected in contact with contaminated soil or material to form a more stable insoluble state with reduced leachability of the metals. Stabilization chemically binds metal ions in the free liquids and immobilizes contaminated soil and materials thereby reducing their solubility through a chemical reaction. The physical characteristics of the "stabilized" contaminated material is not changed by this process with respect to development.

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