

LeachX

A Two-part Heavy Metals Stabilization Product

LeachX is a two-part stabilization technique that takes advantage of two chemical processes to immobilize heavy metals in soil.

The first additive is designed to render heavy metals insoluble by reacting free metal ions with a mixture of sulfide, carbonate and hydroxide anions at an elevated pH. The second additive provides for pozzolanic reactions to proceed to immobilize the metals within a calcium silicate hydrate.

Certain materials undergo what is known as a pozzolanic reaction. A pozzolanic reaction takes place in the presence of lime (calcium oxide, CaO), silicate, alumina and water to produce reaction products that are cementitious in nature. Materials that undergo such reactions are collectively known as pozzolans. They are frequently amorphous (glassy) in nature, with a chemical composition rich in silica and, to a lesser degree, alumina. Examples of pozzolans include pulverized-fuel ash, condensed silica fume, metakaolin and glass cullet. Usually the main product of a pozzolanic reaction is a material known as calcium silicate hydrate (C-S-H) gel. The **LeachX** formula utilizes this type of material bonding to immobilize the heavy metals after they have undergone the reaction that places them in an insoluble form.

Advantages of the **LeachX** process include:

- **LeachX** will not release free liquids when compressed.
- The final product will cure and gain compressive strength with time
- Dramatically decreases the leachability of metals and volatile wastes
- Easy to apply

Applications for the **LeachX** process include:

- Compliance with RCRA regulations applying to solidification of bulk and containerized liquid wastes
- Fixation of heavy metals prior to land disposal
- Soil stabilization

LeachX is typically spray applied to soil as it passes through a pug mill or similar device. In certain situation **LeachX** can be spray applied to soil and mixed in-place with heavy equipment.

Laboratory treatability studies are typically performed prior to application in the field to determine the exact dosage necessary to achieve the target goals of the remediation.