

Disposal of Shore Pac Slurry

Introduction

The use of synthetic polymer slurries as replacements for Bentonite and other minerals has become widespread. Key attractions of polymer slurries have been their degradability and low environmental impact, which has translated into reduced disposal difficulty for contractors.

The drilling slurry Shore Pac manufactured by CETCO Construction Drilling Products, to be used on a drilled shaft Project is not a hazardous waste, nor does it pose any threat to the waters of the State.

Is Polymer Slurry Toxic?

A Shore Pac slurry system can be classified as an acrylamide which falls under the general classification of a polyacrylamide. The acrylic contents of the molecule are non-hazardous and non-toxic. Shore Pac's chemical classification is listed in the U.S.A. EPA TSCA manual under code 25085-02-3. Shore Pac is identified as a non-toxic substance as defined by the U.S.A. Environmental Protection Agency. Shore Pac is approved for use by The Federal Highway Administration, (FHWA), and is used in States throughout the nation. The Method for disposing the drilling slurry Shore Pac on this Drilled Shaft Project has been listed within this correspondence.

Is Polymer Slurry Biodegradable?

Synthetic polymers are not readily biodegradable. Biodegradable means that slurry made from a biodegradable polymer will be subject to spoilage with breakdown of the slurry. Polymer slurry is not subject to spoilage. Shore Pac slurry is chemically degradable. Chemically degradability relates to chemical oxygen demand, or COD, and is the degrading of the polymer through interaction with another non-living substance. Shore Pac slurry is chemically degradable on demand by treatment with the chemical oxidizing agent Slurry Buster.

The Shore Pac Polymer slurry contacts the surrounding soil and groundwater during construction of cast-in-drilled-hole piling but does not migrate into the surrounding soil of the excavation due to a gel membrane that forms along the sidewalls of the borehole. This membrane cohesively binds the soils together forming temporary glue, which seals off the vertical liquid slurry column. The product Shore Pac being proposed for use as drilling slurry for the foundation project is not harmful to the environment.

Is Polymer Slurry able to be Broken Down?

At the end of the job there is usually a need to dispose of a quantity of polymer slurry which remains from the last borehole or excavation. The Shore Pac slurry is degraded by a variety of mechanisms. The polymer is broken down or removed from the slurry during use in drilling or excavating. The mechanisms which cause this include adsorption (bonding) onto earth soils and chemical reaction with alkalis and contaminants such as calcium in the slurry, the make-up water or the groundwater.

Shore Pac slurry fluids are non-toxic and are readily degradable upon completion of a slurry job to facilitate disposal. Upon completion of the project, any remaining **Shore Pac** is broken down with the chemical oxidizer (**Slurry Buster**) the most common oxidizer for this purpose.

The Slurry Buster solution is added to the Shore Pac slurry to be treated. After the breaker is added, the slurry is circulated using the pumps on-site to ensure complete oxidation of the polymer molecules. This is accomplished by pumping it back into a holding tank.

The Slurry Buster destroys the active ingredients within the polymer and at the same time breaks the polymer, reverting it back to basic water. The end result of Shore Pac decomposing after its encounter with (**Slurry Buster**) is not a harmful substance.

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Is Polymer Slurry Disposable?

Treated slurry fluids are environmentally safe when handled as directed. When breakdown is complete, **all that remains is trace acrylate molecules and water.** This is often safely discharged or simply spread on the ground to evaporate or used in dust control.

Additionally, polymers with the same chemical base as found in Shore Pac are used in potable water treatment as flocculants, with federal government clearance. They are widely used throughout the world as coagulants and flocculants used for environmental and process improvement, acting through solid/liquid separation. They are used in paper manufacturing, wastewater treatment, mineral and oil extraction, soil conditioning and as thickeners in cosmetics. As such, they have many regulatory approvals around the world, such as for drinking water treatment, indirect additives for food-contact paper and for other specific uses. Municipal sewage sludge, which has been polymer-treated for de-watering, is widely applied to agricultural land.

CETCO certifies that Shore Pac slurry is not harmful to the environment and is safe for disposal.

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