MicroZVI Specification Sheet

MicroZVI Technical Description

MicroZVI™ is an *In Situ* Chemical Reduction (ISCR) reagent that is comprised of colloidal ZVI particles suspended in glycerol and environmentally acceptable, proprietary dispersants. MicroZVI is especially effective for promoting the rapid biological degradation of chlorinated ethenes and other volatile organic compounds (CVOCs). Zero valent iron (ZVI) stimulates anaerobic biological degradation by creating a strongly reducing and hydrogen rich environment for reductive dechlorination. MicroZVI also reacts with and destroys CVOCs through a direct abiotic chemical reaction.

The small ZVI particle size is a key feature of MicroZVI. With an average diameter of a few micrometers, MicroZVI particles are small enough to be suspended in water and injected directly into contaminated aquifers at low pressures. This particle size, however, is still large enough to provide long-acting reactivity without requiring the mechanical mixing, thickening, high injection pressures, and fracking needed to inject larger ZVI products. This includes the ability of MicroZVI to be injected using direct push technology and through horizontal and vertical screened wells. MicroZVI can also be mixed with and co-injected along with other organic remediation amendments (ex. 3-D Microemulsion®), pH modifiers, and anaerobic microbes (ex. Bio-Dechlor Inoculum® Plus).

MicroZVI is Best in Class For

- ☑ Longevity
- ☑ Kinetics
- ☑ Transport

To see a list of contaminants treatable by MicroZVI, view the Range of Treatable Contaminants Guide.

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Chemical Composition

Glycerol - CAS 56-81-5
Iron powders - CAS 7439-89-6
Iron (II) sulfide - CAS 1317-37-9

Properties

Appearance: Viscous metallic suspension
Viscosity: Similar to paint
Color: Dark grey
Odor: Slight
pH: Typically 7-9 as applied
Density: About 14 lb/gal

Storage and Handling Guidelines

Storage:

- Use within two weeks of delivery
- Store in original closed container
- Store at temperatures below 95F°
- Store away from incompatible materials

Handling:

- Never mix with oxidants or acids
- Wear appropriate personal protective equipment
- Do not taste or ingest
- Observe standard industrial hygiene practices
- The material is slippery and will stain clothes

Applications

MicroZVI is diluted with water on-site and easily applied into the sub-surface using low pressure injections. MicroZVI is compatible with and can be co-applied with products like 3-D Microemulsionand Bio-Dechlor Inoculum Plus.

Health and Safety

MicroZVI is relatively safe to handle; however, avoid contact with eyes, skin and clothing. OSHA Level D personal protection equipment including: vinyl or rubber gloves and eye protection are recommended when handling this product. Please review the Safety Data Sheet for additional storage, usage, and handling requirements here: MicroZVI SDS.

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