

ZVI-ironGEL™

Colloidal Zero-Valent Iron

The Next Generation of In Situ Remediation

ZVI-ironGEL™ is revolutionizing the field of in situ chemical reduction (ISCR) with an advanced microscale zero-valent iron (mZVI) colloidal suspension. Designed for superior performance, ZVI-ironGEL™ is a powerful solution for the treatment of chlorinated solvents, heavy metals, and other recalcitrant contaminants in groundwater and soil.



Key Features & Benefits

Enhanced Reactivity & Longevity: The engineered formulation includes sulfidated and non-sulfidated ZVI particles ranging from 1 to 100 microns. Sulfidation enhances selectivity and effectiveness against highly substituted hydrocarbons such as PCE and TCE, while the non-sulfidated fraction ensures fast reaction kinetics with less substituted solvents like VC.

Shear-Thinning Viscoelastic Gel: The environmentally friendly biopolymer formulation creates a gel that exhibits shear-thinning behavior upon dilution with water. This ensures high colloidal stability, improved injectability, and superior distribution in the subsurface.

Optimized Injection Concentration: Delivered as a 45% ZVI colloidal suspension with a mean particle size under 10 microns, ZVI-ironGEL™ is designed for injection at a 30 g/L ZVI concentration, facilitating ease of application.

Broad-Spectrum Action: ZVI-ironGEL™ rapidly initiates reductive processes in the subsurface. The smaller particles provide immediate reactivity, while larger particles extend the longevity of the treatment.

Improved Corrosion Resistance: Sulfidation partially suppresses iron corrosion, extending the effectiveness of ZVI in groundwater environments.

Versatile Application Strategies: Ideal for creating permeable reactive barriers (PRBs) and targeting secondary contamination sources through injection.

ZVI-ironGel™

- Easy to apply
- Does not require high pressure or large pumps for injection
- Disperse widely in the subsurface aquifer
- Mitigates ZVI aggregation and toxicity to bacteria
- Enhanced reactivity and longevity

Application & Deployment

ZVI-ironGEL™ can be injected into the subsurface to form reactive zones for contaminant treatment or deployed as a permeable reactive barrier to intercept and remediate contaminant plumes. Its advanced formulation ensures effective dispersion and longevity, making it a cost-effective and high-performance choice for environmental remediation professionals.

Product Content

Chemical Name	Concentration (%)	CAS Number
Iron	40-50	7439-89-6
Iron (II) Oxide	1-5	1345-25-1
Biodegradable Carbohydrates	50-60	Proprietary

Product Characteristics

Parameter	Specification
Appearance	Black or metallic gray
Odor	Odorless
pH	8-10.5
Relative density	1.7-1.8 g/cm ³
Particle size	Diameter 1-100 µm

Packaging Options

ZVI-ironGEL™ is available for shipping in 23 kg pails. Common formulations available include:

ZVI-ironGEL™ - 10	45% ZVI with a mean particle size <10 micron
ZVI-ironGEL™ - 45	45% ZVI with a mean particle size <45micron
ZVI-ironGEL™ - Mix	45% ZVI containing a mixture of ZVI-ironGEL™ - 10 and ZVI-ironGEL™ - 10

Safety Observations

It is recommended to always use personal protective equipment (PPE) that matches the specific task when working with any type of chemicals.

**Tersus Provides Site-Specific Remediation Programs
and Performance Monitoring Plans
To Meet Your Budget**

Discover how ZVI-ironGEL™ can transform your remediation projects. If you have a project and need a remediation solution, visit tersusenv.com/support and complete the Site Evaluation Form. Our team will then reach out to offer options that best suit your goals.

Interested in shopping online for amendments, supplements, and products to enhance conditions, accelerate clean-up, and reduce field-time? Please visit our online shop at surbec.com.