

In-Situ Chemical Oxidation (ISCO)

WHEN
SAFETY MATTERS

Who is ISOTEC?

ISOTEC provides collaborative, turn-key design and remediation services. We offer trustworthy in-situ oxidation and reduction methods to remediate a wide-range of contaminants including chlorinated solvents, petroleum-related compounds, oxygenates, pesticides, pharmaceutical-related compounds, metals, etc. With decades of focused remedial experience and an exceptional safety record, ISOTEC is the obvious choice for any national or international remediation project. Using our extensive knowledge of oxidant capabilities, processes and delivery methods, we are able to evaluate our **patented Modified Fenton's Reagent** and other oxidants to tackle even the most complex of contaminated sites safely and effectively.

Why ISCO?

- Powerful free radical production destroys contaminants
- Reduce harmful subsurface contaminants into less toxic by-products
- Effectively treats fuels, solvents, pesticides and 1,4-dioxane
- Precisely target treatment zone with over-lapping points of injection
- Save time and money by focusing on source area concentrations
- Treat around sensitive infrastructure
- Scalable to fit any size project
- Projects completed in short timeframes



Request an
Estimate Online!

www.ISOTEC-inc.com



Contact Us!
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Injection Options Suited for Your Site:

Modified Fenton's Reagent (MFR)	Modified Fenton's reagent (MFR) is based on the principles of Fenton's chemistry first demonstrated in 1894. Our MFR process enhances in-situ treatment of soil and groundwater contamination using Fenton's chemistry while mitigating the drawbacks associated with Fenton's reagent in its conventional form (such as acidic pH, limited catalyst mobility, aggressive reactions, etc). The process generates powerful free radicals when the catalyst reacts with hydrogen peroxide.
Sodium Persulfate	<p>Activated by our patented MFR, ISOTEC's persulfate technology uses sodium persulfate, alkaline reagents (including sodium hydroxide and lime), and hydrogen peroxide or, our patented chelated iron complex, to produce sulfate free radicals that attack contaminants.</p> <p>Persulfate, when used as an in-situ chemical oxidation reagent, is especially effective at treating contaminants from aromatics like benzene, toluene, ethylbenzene, xylenes; and, chlorinated solvents such as perchloroethene (PCE) and trichloroethene (TCE).</p>
Permanganate	<p>ISOTEC's permanganate process utilizes either potassium permanganate (KMnO₄) or sodium permanganate (NaMnO₄) for in-situ chemical oxidation. The reaction mechanism associated with both reagents is similar and particularly effective at treating aqueous concentrations of PCE and TCE in environmental remediation projects.</p> <p>ISOTEC's Permanganate-based reagents are designed for both independent usage and in combination with other ISOTEC's reagents (e.g. MFR and Persulfate reagent).</p>
Bioremediation	ISOTEC's in-situ bioremediation services utilize a wide variety of commercially available bio amendments, as well as custom mixes specifically designed for effective remediation of your site. Our experience spans over the last 2 decades and ensures that the best injection specialists in the industry are performing the remediation.
Metals Remediation	In-situ heavy metals treatment is performed via two technologies – calcium polysulfide (CaS _x or CAPS) and ISOTEC Fe catalyst (AB24). Additional reagents utilized include FerroBlack®, sodium metabisulfite and sodium thiosulfate. In-situ chemical reduction treatment is a comparatively economical and rapid alternative to pump-and-treat. Furthermore, complex subsurface mixes of heavy metals and organic contaminants (e.g. VOCs, SVOCs) can be treated simultaneously using a combination of ISOTEC's proprietary technologies.

**Call for a FREE Consultation
and Estimate**

