

# METAFIX® REAGENT Treatability Test

Laboratory Services



METAFIX® REAGENTS are custom formulated blends of reducing agents, reactive minerals, adsorbents, mineral activators, catalysts and pH modifiers for the treatment of heavy metals. Site-specific bench scale testing allows the optimization of the reagent formulation and dosage rates needed to achieve remedial goals. This customized approach allows for a cost-efficient solution to meet or exceed the remedial objectives.

The standard treatability test will include the evaluation of three METAFIX® REAGENTS formulations at two dosage rates, as well as an untreated control. The testing method will be done by TCLP, SPLP or a groundwater leachate test, at the discretion of the client.

## Standard test

A standard METAFIX® treatability test costs \$2,500 for one soil sample, no replicate analyses, and up to three metals included. Table 1 provides a standard list of analytes and detection limits. A report will be issued following the completion of the study.

## Customized test

Customized METAFIX® treatability tests can be designed and performed to address other metals, such as mercury or metalloids, evaluate lower detection limits or the EPA's Leaching Environmental Assessment Framework (LEAF) Methods. In addition, column studies can be performed to help evaluate ground water treatment efficacy.

Please contact your Technical Representative to request a proposal.

## Materials needed for sample collection and shipping

- Sample containers (0.5 or 1.0 L plastic wide mouth jars with lids)
- Sealable plastic bags
- Bubble wrap or bags
- Large plastic bag with cable tie
- Shipping cooler
- A plastic tag with transparent document sleeves attached to the cooler handle for holding the shipping documents

## Sample collection

2.0 kg of soil and 5.0 L of groundwater (if evaluating a saturated zone application) are required for each METAFIX® treatability test. Samples should be placed in plastic containers with a quality seal. Prior to sealing, clean the outside of each container, including the threads, and make sure to tightly seal the lid onto each.

**NOTE: DO NOT PRESERVE SAMPLES BY ACIDIFICATION OR ANY OTHER METHOD.**

## Sample label requirements

Samples must be placed in the 0.5 or 1.0 L plastic containers. Each individual sample must be clearly labeled with:

1. Project name
2. Date and time of collection sample
3. A descriptive sample number and name
4. The name of the person who collected the soil
5. Every container must also be marked "Contents – Soil Sample" or "Contents – Groundwater Sample"

## Preparation for shipping

1. Place each container inside a sealable plastic bag as secondary containment to prevent spillage during transport
2. Wrap each container in bubble plastic to protect from damage during shipping
3. Secure all the samples in the large plastic bag with a cable tie as tertiary containment
4. Place the large bag with samples in the shipping cooler
5. Complete the Chain of Custody form and place it inside the cooler
6. Surround the large bag with packing material (e.g. newspapers, packing peanuts, bubble plastic or other appropriate material) to prevent the samples from shifting during shipping
7. **DO NOT INCLUDE ICE OF ANY KIND IN THIS SHIPMENT**
8. Securely close and seal the cooler with packaging tape
9. Make sure the cooler's water drain, if present, is taped closed or otherwise sealed
10. Place the shipping documents in one of the re-sealable transparent sleeves on the handle tag

## Shipping information

Please contact your Evonik Technical Representative prior to shipping samples and provide the completed Chain of Custody Form and shipment tracking information.

Samples shipping from outside the United States require specific labeling and shipping information; please request further information prior to shipping. Billing will be done by invoice once the final report is issued.

## Samples should be shipped to:

Resolution Partners  
Attention: METAFIX  
967 Jonathon Drive, Madison, WI  
53713, USA  
+1 608 669 1248

# METAFIX® REAGENT Treatability Test

Laboratory Services



## Chain of custody

Company

Address

City

State/Province

Postal Code

Country

Contact name

Telephone number

Fax

Email

If billing information is different:

Company

Address

City

State/Province

Postal Code

Country

Contact name

Telephone number

Fax

Email

Evonik Technical Sales Representative providing support

Project name

Number of soil samples

Number of groundwater samples

What metals are being evaluated for treatment with METAFIX®?

Is the treatment of chlorinated solvents being evaluated for use with METAFIX®?      Yes      No

Please provide the remedial goals and detection limits. Are replicate analyses required?      Yes      No

If more than one sample, do you want      each soil sample tested separately or      homogenized into one sample?

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Please specify the requested testing protocol:             TCLP             SPLP             Groundwater             Other

The TCLP test is used for soil disposal as non-hazardous material. The SPLP test is applied to validate in situ stabilization of vadose zone soils, as the test is designed to simulate exposure to rainfall over an extended period of time. Groundwater analysis is applied to validate in situ treatment of the saturated zone to evaluate changes in dissolved concentrations.

Standard filtration of samples is 0.7 µm for TCLP and SPLP, and 0.45 µm for groundwater leaching tests.

Please specify desired filtration (if different from standard): \_\_\_\_\_ µm

Standard soil : liquid ratio for METAFIX® trials is 1 : 20.

Please indicate the desired soil : liquid ratio (if different from standard): \_\_\_\_\_    Note: alternate ratios may affect sample volume requirements.

Standard reaction time is 1 week. A quote for a customized test outline can be provided upon request.

Sample #	Sample name	Sample note (special instructions, comments, etc)

**METAFIX® REAGENT**  
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Special instructions:		Tracking No:	
		Method of shipment:	
Relinquished by / date:	Received by / date:	Relinquished by / date:	Received by / date:

Table 1 Standard list of analytes and detection limits

Metal	MDL, MG/L
Arsenic	0.030
Cadmium	0.003
Chromium	0.005
Copper	0.005
Lead	0.030
Molybdenum	0.010
Nickel	0.010
Antimony	0.030
Selenium	0.030
Vanadium	0.001
Zinc	0.001

Laboratory comments (internal use only):
PO #