

MODERNWATER

EnviroGard®

## DDT in Soil Test Kit

Envirogard® is a rapid field enzyme immunoassay method for the analysis of soil remediation, assessment and industrial testing. It uses a coated tube technology to detect the analyte of concern.

### Test result type

- Semi-quantitative or qualitative data

### Samples per kit

- Up to 17 soil sample test results can be obtained per kit, depending upon the number of runs and action levels used.
- Typical applications use two or three calibrators and one negative control.

### Assay range

- Semi-quantitative results (greater or less than) at calibrator (action) levels of 0.2, 1.0 and 10.0 ppm DDT.
- Minimum detection level (MDL) is 0.2 ppm DDT.
- No maximum screening level as extracts can be diluted into test range

### Sample preparation

- Soil samples require prior extraction using the MWI Sample Extraction Kit (sold separately).
- The Sample Extraction Kit provides material for 12 soil sample extractions with methanol.

### Sampling time

- Soil extraction time is typically 2 minutes per sample plus assay run time of approximately 30 minutes.

- Rapid and simple field testing procedures
- Semi-quantitative data results at set calibrator (action) levels
- Test up to 17 samples at once for increased cost efficiency
- Results available in less than 30 minutes
- Coated tube immunoassay
- EPA SW-846 Method #4042



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## Specificity

The EnviroGard DDT immunoassay test does not differentiate between DDT and other organochlorines. The table below shows compounds at the minimum detection limit (MDL) -an approximate concentration required to yield a positive result at the lowest standard. The IC50 is the concentration required to inhibit one-half of the color produced by the negative control. It is also used to calculate cross-reactivity values to similar compounds.

DDT IN SOIL (PPM)		
Contaminant	MDL	IC50
p,p'-DDT (kit calibrator)	0.2	1.25
p,p'-DDD	0.05	0.3
p,p'-DDE	0.6	3.6
o,p'-DDT	14.9	93
o,p'-DDD	1.76	11
o,p'-DDE	14.9	93
DDA	0.01	0.04
Chloropropylate	0.01	0.08
Chlorobenzilate	0.06	0.35
Dicofol	0.3	2
Tetradifon	2.2	14

## Basic Test Procedure

- Extract the soil sample using the MWI Sample Extraction Kit
- Pipet DDT assay diluent into the antibody coated tubes, then add either DDT calibrator or sample extract to the tubes along with DDT enzyme conjugate.
- Wait 15 minutes, then decant and wash the tubes.
- Add substrate.
- Wait for 10 minutes, add stop solution
- Read the absorbance using a photometer, and interpret the results. (Refer to DDT Soil Test Kit Instruction Guide procedures.)



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## Test kit components

- 20 antibody coated tubes
- Enzyme conjugate, colour developing and colour stop solution reagents
- Calibrators for 0.2, 1.0 and 10.0 ppm DDT.
- Negative control calibrator
- Test tube rack and pipet tips.
- Test kit instructions

## Storage & precautions

- Shelf life is typically one year from date of manufacture, with specific kit expiration date information provided on product packaging
- Components must be stored at 39° to 46°F (4° to 8°C) when not in use
- Store at ambient temperature 64° to 81°F (18° to 27°C) is acceptable for day of use
- Do not expose to direct sunlight
- Portable spectrophotometer battery should be charged prior to use.

## Required test materials

- |                                |           |
|--------------------------------|-----------|
| • EnviroGard® DDT Soil Kit     | 7310000   |
| • Sample Extraction Kit (soil) | 7310000EB |

## Part #

## Required test equipment

- |  |         |
|--|---------|
| • Field Soil Lab (accessory kit) which includes:<br>Repeating pipette*<br>Adjustable pipette*<br>Balance*<br>Repeating pipette tips*<br>Timer* | 6050400 |
| • Differential spectrophotometer*<br>110V  | 6000001 |
| 220V   | 6000002 |
| Or   |         |
| • Field Lab System Rental (includes items marked '*' above)  | 6997020 |

## Other recommended materials

- Latex gloves
- Absorbent paper for blotting test tubes
- Liquid and solid waste containers
- Calculator