

## Chlordane in Soil

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 data or qualitative

### Samples per kit

- Up to 16 soil samples depending on the number of runs and action levels used. (Kit includes 20 antibody coated tubes)

### Assay range

- Semi-quantitative results (greater or less than) at calibrator (action) levels of 20, 100 and 600 ppb total Chlordane
- Minimum detection limit (MDL) is 20 ppb Chlordane
- No maximum screening level as extracts can be diluted into test range

### Sampling preparation

- Soil samples require prior extraction using the sample extraction kit (sold separately)
- The sample extraction kit provides material for 12 soil sample extractions with methanol

### Sampling time

- Approximately two minutes per sample plus assay run time of approximately 30 minutes

- Rapid field testing kit
- Semi-quantitative results at set calibrator (action) levels
- Test up to 16 samples at one time
- Results in less than 30 minutes
- Coated tube immunoassay
- Training available
- EPA SW-846 Method #404 I



## Specificity

The EnviroGard® Chlordane immunoassay test does not differentiate between Chlordane and other cyclodienes. 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 colour produced by the negative control. It is also used to calculate cross-reactivity values to similar compounds, the approximate Lower Limits of Detection (LDD) for the cross-reacting compounds.

CHLORDANE SOIL (PPB)		
Contaminant	MDL	IC50
Chlordane	20	100
Endrin	4.4	22
Endosulfan	7.2	36
Endosulfan II	5.6	28
Dieldrin	8.4	42
Heptachlor	6.8	34
Aldrin	23.2	116
Toxaphene	560	2,800
Lindane	920	4,600
Alpha-BHC	3,800	19,000
Delta-BHC	8,000	40,000

### Basic Test Procedure

- Extract the soil sample using the sample extraction kit
- Pipet Chlordane assay diluent into the antibody coated tubes, then add either calibrator or sample extract into the tubes
- Wait for 15 minutes
- Add Chlordane enzyme conjugate to the tubes
- Wait for five minutes, decant and wash the tubes
- Add substrate solution
- Wait for three minutes, add stop solution
- Read the absorbance using a photometer and interpret the results. (Refer to Chlordane Soil test kit instruction guide procedures)
- Stop the reaction and interpret results

### Test kit components

- Assay diluent
- 20 antibody-coated test tubes
- Enzyme conjugate, substrate and stop solution reagents
- Calibrators for 20, 100 and 600 ppb Chlordane
- 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
- Reagents 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
- Kits must be brought to 64° to 81°F (18° to 27°C) before use
- Do not expose colour solution to direct sunlight
- Portable spectrophotometer battery should be charged prior to use

### Required test materials

- | Required test materials            | Part #    |
|------------------------------------|-----------|
| • EnviroGard Chlordane in soil kit | 7311000   |
| • Sample extraction kit (soil)     | 7311000EB |

### 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 |
| • Field lab system rental (includes items marked with * above)   | 6997020 |

### Other recommended materials

- Latex gloves
- Absorbent paper for blotting test tubes
- Liquid and solid waste containers
- Calculator
- Tap or laboratory grade water for tube rinsing
- Marker pen



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