

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

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 IC_{50} 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.

- » 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 #4041



CHLORDANE SOIL (PPB)

Contaminant	MDL	IC ₅₀
Chlordane	20	100
Endrin	4.4	22
Endosulfan I	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

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

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
- » Storage 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

Part

- » EnviroGard Chlordane in soil kit 7311000
- » Sample extraction kit (soil) 7311000EB

Required Test Equipment

- » Field soil lab (Accessory kit) which includes: 6050400
 - » Repeating pipette*
 - » Adjustable pipette*
 - » Balance*
 - » Repeating pipette tips*
 - » Timer*
- » Differential spectrophotometer
 - » 110V 6000001
 - » 220V 6000002
- » Field lab system rental (includes items marked with *above) 6997020