

Remediation, Assessment & Industrial Testing



RaPID Assay[®]

PCB RaPID Assay

Features

- rapid field or lab testing method for the analysis of soil, water and wipe samples
- quantitative or semi-quantitative data results
- test up to 50 samples at one time
- results in approximately 60 minutes
- magnetic particle immunoassay
- training recommended
- EPA SW-846 Method # 4020

Test Result Type

- Quantitative, semi-quantitative or qualitative.

Samples per Kit

- Two kit sizes available:
 - 30 Test Kit (tests up to 20+ samples)
 - 100 Test Kit (tests up to 80+ samples)

Assay Range

- Soil:
0.5 to 10.0 ppm
Total PCB's
as Aroclor 1254
- Water:
0.5 to 10.0 ppb
Total PCB's
as Aroclor 1254
- Wipes:
5 to 100 ug per wipe
Total PCB's
as Aroclor 1254
- Range can be extended with additional dilutions



Sample Preparation

- Soil and wipe samples require prior extraction using the SDI Sample Extraction Kit (sold separately).
- The Sample Extraction Kit provides materials for 12 soil sample extractions with methanol.
- Water samples must be diluted one part sample to one part methanol to prevent adsorptive loss.

The Sample Extraction Kit

provides materials for 12 soil sample extractions with methanol.

Sampling Time

- Soil extraction time is typically 2 minutes per sample plus assay run time of approximately 60 minutes.



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Basic Test Procedures

- Add prepared sample, enzyme conjugate, and antibody coupled magnetic particles to a test tube. Vortex.
- Incubate for 15 minutes.
- Using the RaPID Magnetic Separator, decant & wash two times.
- Add color solution and incubate 20 minutes.
- Stop the reaction and read color at 450 nm.
- Quantitative results and QC parameters are calculated and printed automatically using the RPA-I spectrophotometer.

Specificity

The table below shows compounds at the limit of quantitation (LOQ) - 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.

PCBs in Soil (ppm)

Contaminant	LOQ	IC50	Reactivity Factor
Aroclor 1254	0.5	3.60	1.00
Aroclor 1260	0.3	2.30	1.56
Aroclor 1248	0.6	4.22	0.85
Aroclor 1242	1.2	8.80	0.41
Aroclor 1262	0.7	4.74	0.76
Aroclor 1232	2.6	18.76	0.19
Aroclor 1268	3.0	21.80	0.16
Aroclor 1016	3.6	25.60	0.14
Aroclor 1221	22.6	162.6	--

for water, divide above values by 1000

Test Kit Components

- Antibody coated magnetic particles for analysis of 30 or 100 test tubes
- Diluent zero, wash, enzyme conjugate, color development, stop reagents and wash solution
- Standards for 0.25, 1.0, and 5.0 ppb as Aroclor 1254
- Kit Control at 3.0 ppb as Aroclor 1254
- Disposable test tubes
- 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 color solution to direct sunlight.

Required Test Materials

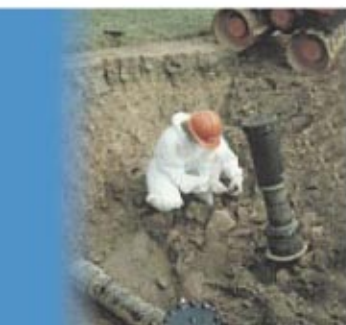
- | | |
|--|-----------------------------|
| ◦ PCB Assay Test Kit: 30 Tube | <i>SDI Part #</i>
A00133 |
| ◦ PCB Assay Test Kit: 100 Tube | A00134 |
| ◦ SDI Sample Extraction Kit
(for soil samples only) | A00137EA or
A00137EB |
| ◦ SDI Sample Extraction Kit
(for wipe samples only) | A00137WA or
A00137WB |
| ◦ PCB Sample Diluent: 100 ml
(as needed) | A00136 |
| ◦ Universal Range Extension Kit
(as needed to extend range) | A00235 |

Required Test Equipment

- | | |
|-----------------------------|------------------|
| ◦ RaPID Assay Accessory Kit | 6050100 purchase |
| ◦ which contains: | 6997010 rental |
| ◦ RPA-I RaPID Analyzer | A00003 |
| ◦ Magnetic Separation Rack | A00004 |
| ◦ Repeater Pipet | A00008 |
| ◦ Adjustable Volume Pipet | A00176 |
| ◦ Vortex Mixer | A00014 |
| ◦ Portable Balance | A00131 |
| ◦ Digital Timer | A00015 |
| ◦ Repeater Pipet Tips | A00009 |
| ◦ Adjustable Pipet Tips | A00013 |

Other Recommended Materials

- Latex gloves
- Liquid and solid waste containers
- Calculator
- Absorbent paper for blotting
- Marking pen



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