**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.

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

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

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 A00133
- PCB Assay Test Kit: 100 Tube A00134
- SDI Sample Extraction Kit A00137EA or A00137EB
- SDI Sample Extraction Kit A00137WA or A00137WB
- PCB Sample Diluent: 100 ml (as needed)
- Universal Range Extension Kit (as needed to extend range) A00235

Required Test Equipment

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

Other Recommended Materials

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