

# Soil-Cell® Systems



## Extract organics from soils more easily

- Simply follow steps below and sample is ready for analysis
- Replaces microwave technology for safer sample preparations

**Soil-Cell system K8150 includes:** 25-well HotBlock® unit (SC150), 24 soil extraction cells, one reference cell, and two aluminum transfer racks.

**Soil-Cell system K8151 includes:** 35-well HotBlock unit (SC151), 34 soil extraction cells, one reference cell, and three aluminum transfer racks.



Description	120 VAC	240 VAC
	Catalog number	Catalog number
Soil-Cell system with 25-well HotBlock unit	<b>K8150</b>	<b>K8150-240</b>
Soil-Cell system with 35-well HotBlock unit	<b>K8151</b>	<b>K8151-240</b>



### An alternate method of Soil Extraction for Organics, EPA Method 3546

Environmental Express, known for its innovative products, has developed the Soil Extraction Cell System for the extraction of semi-volatile organic compounds in soil samples. The Soil Extraction Cell System meets the requirements of the Performance Based Measurement System established by the EPA and replaces microwave technology with a HotBlock and stainless steel Soil Extraction Cells. Analytical results of a CRM (Certified Reference Material) for PAH/BNA and TPH fell within the required acceptance limits and were very reproducible. Real world soil samples were also extracted using this procedure for PAH/BNA and PCB compounds and compared to results achieved using SW846 Method 3545. Results were comparable for all three groups of compounds.

## Soil Extraction Cell and Parts

Description	Catalog number	Qty/pk
Soil extraction cell complete unit	K8000	1
Stainless steel inner lid	K8002	1
Threaded outer cap	K8003	1
Viton® O-ring	K8004-V	25
PTFE encapsulated O-ring	K8004-TV	5
Temperature reference cell complete unit	K8000R	1
Thermometer for reference cell	K8006	1
Brass foil rupture seal	K8007	100
Rack set for K8150	K8008-25	2
Rack set for K8151	K8008-35	3

## Surrogates and Consumables

Description	Volume	Catalog number
Base-neutral, 100 µg/mL; Acid, 100 µg/mL	25 mL	M0011
Base-neutral, 100 µg/mL; Acid, 100 µg/mL with CLP	25 mL	M0013
Nonatriacontane, 80 µg/mL; O-Terphenyl, 80 µg/mL	25 mL	M0030
Pesticide/PCB surrogate solution, 200 µg/mL	1 mL	GCS130023-07
Herbicide surrogate solution, 2000 µg/mL	1 mL	GCS011025-01
Pelletized 60 mesh diatomaceous earth	10 kg	K6180-10
Sodium sulfate, anhydrous	500 g	LC248801

## Heat-Resistant Gloves

- Protect hands to 325°C



Glove size	Catalog number	Qty/pk
Medium	SY765-M	12
Large	SY766-L	12

## Chemical-Porcelain Büchner Funnel

- Fixed, perforated plate and glazing inside and out, except for the rim
- Highly resistant to chemicals
- Autoclavable
- Fits paper diameter 50 to 55 mm

Height	Capacity	Catalog number	Qty/pk
101 mm	87 mL	K89038-120-1	1
		K89038-120-6	6

## Soil-Cell®/HotBlock® Procedure for Method 3546:

These steps should only be used as a guide. All QC samples, limitations, interferences, and reagent specifications are addressed in depth in EPA Method 3546. Safety concerns are also part of the full method.

- When practical, air dry the sample at room temperature for 48 hours in a glass tray or on hexane-rinsed aluminum foil. Alternatively, mix the sample with an equal volume of anhydrous sodium sulfate or diatomaceous earth until a free-flowing powder is obtained.
- A percent dry weight should be performed on a separate aliquot of sample for the percent dry weight calculation at the end of the analysis.
- Weigh 10 to 30 g of sample into the Soil Extraction Cell. May vary depending on individual laboratory needs.
- Add the surrogates and/or spikes listed in the determinative method to each appropriate sample.
- Add approximately 30 mL of solvent. (This method was validated using methylene chloride. Other solvents may be used but must be validated by the individual laboratory).
- Place the stainless steel inner lid with the O-ring in the Soil Extraction Cell.
- Hand-tighten the threaded outer cap onto the Soil Extraction Cell.
- Heat the HotBlock unit to 130°C. This will yield an internal solvent temperature of 100 to 115°C, which is recommended by EPA Method 3546.
- Put the Soil Extraction Cells into the HotBlock unit and heat for 30 minutes at a block temperature of 130°C. This will give samples 10 to 20 minutes at the appropriate temperature for extraction, which is recommended by EPA Method 3546.
- Remove the cells and allow them to cool to room temperature.
- Unscrew the threaded outer cap and remove. Take care in doing this step, as pressure will develop in the Soil Extraction Cells during the heating process.
- Take out the stainless steel inner lid and rinse with appropriate solvent, taking care to collect this rinsate in the cell.
- Proceed with filtering and rinsing, collecting all filtrates. A Büchner funnel with vacuum is recommended, but any appropriate laboratory filtration device may be used.

The extract is now ready for concentration, cleanup, and analysis.