

Soil Cell FAQs

From what method is this derived?

This procedure is based on SW846 Method 3546 titled “Microwave Extraction”.

What type of heating device does the Soil-Cell need?

The Soil-Cell utilizes a HotBlock for the heating device rather than a microwave. The HotBlock provides the exact same temperature range and heating requirements that are required of Method 3546.

What compounds can be extracted using the Soil-Cell System?

All organic compounds falling under SW846 Method 3546 can be extracted using this system including PAH/BNAs, PCBs, TPH, Pesticides, Herbicides, etc.

What solvents are used for the extractions?

The Soil-Cell method was validated using Methylene Chloride as the extraction solvent. Other solvents may be used depending on the determinative method employed by the laboratory. Unlike microwave technology, it is not necessary to add a polar solvent to pure hydrocarbon solvents which do not absorb microwave energy. All solvents will heat to the required temperature with HotBlock technology.

How much solvent does the Soil-Cell use?

It is recommended that approximately 30mL of solvent be added to each sample during the extraction. An additional 5–10mL is used during the rinsing and filtration steps.

How much sample is required?

Anywhere from 10–30g of sample should be used. This will vary depending on detection limits and individual laboratory needs.

How long does the extraction take?

The extraction takes 30 minutes once the HotBlock has come up to temperature.

What temperature should the HotBlock setting be?

The HotBlock should be set to 130°C in order to achieve an internal temperature of 100-115°C in the Soil Extraction Cells. Monitor the internal temperature using the Temperature Reference Cell.

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What is the basic procedure?

1. Add 10-30g of sample to the Soil Extraction Cell.
2. Add surrogates, standards, and solvent as needed.
3. Place the inner lid into the Soil Extraction Cell and screw on the threaded cap.
4. Place the cells into the HotBlock and heat to a block temperature of 130°C.
5. Heat cells for 30 minutes at the 130°C temperature. Monitor the internal cell temperature using the Temperature Reference Cell.
6. Take cells out of HotBlock and allow to cool to room temperature.
7. Remove threaded cap and inner lid taking care to rinse inner lid and collect solvent in the cell.
8. Filter using a Buchner funnel or other filtration apparatus.
9. The sample is now ready for concentration, cleanup, and analysis.

How many samples can be extracted at a time?

Environmental Express offers both a 25-well and 35-well HotBlock with the appropriate well sizes to accommodate the Soil Extraction Cells.

What parts of the Soil-Cell must be replaced and how frequently?

It is recommended that the O-rings (K8004-V or K8004-TV) be replaced every 10–20 extractions depending on the amount of use and the types of solvent being used. The rupture seals (K8007) may also need replacement from time to time.

What is the warranty of the system?

The system is covered under a 1-year warranty. If the system fails to adequately perform specified laboratory extractions under normal laboratory use, then the item is fully covered for a period of one year from the date of shipment. This warranty extends to parts, labor, and any approved transportation charges.