

# **CAPE Technologies Products and Services**

## **DF1 Dioxin/Furan Immunoassay Kits (for US EPA Method 4025)**

**DF1 Starter Packages:** Each customer (institution or separate location within a large institution) can purchase one starter package, either small (DF1-ST-A) or large (DF1-ST-B), at a reduced price. This allows the first time user to learn the method while limiting cost. These packages include 2378-TCDD standards. Subsequent purchases will be either the DF1-12 or the DF1-60, as noted below.

**DF1-ST-A:** Small starter package for High Performance Dioxin/Furan Immunoassay training and analysis. Includes two DF1-12 kits (40 antibody coated tubes and matching liquid reagents), one Grip-Rack, and one set of 2378-TCDD standards plus 2 check samples of 2378-TCDD in toluene made by Wellington Labs.

**DF1-ST-B:** Large starter package for High Performance Dioxin/Furan Immunoassay training and analysis. Includes one DF1-60 kit (100 antibody coated tubes and matching liquid reagents), one Grip-Rack, and one set of 2378-TCDD standards plus 2 check samples of 2378-TCDD in toluene made by Wellington Labs.

**DF1 Kits:** After purchase of one starter package, subsequent purchases will be either the DF1-12 or the DF1-60 at their normal retail prices. All CAPE Technologies kits assume that 40% of the EIA materials will be used for various quality assurance samples, including standards, reference samples, replicates, matrix blanks, etc. These kits do not include 2378-TCDD standards and check samples, which must be ordered separately. The same set of standards and check samples made by Wellington Labs and described above for the starter packages can be ordered from Wellington or their distributor for your area ([www.well-labs.com/contactus/contact.html](http://www.well-labs.com/contactus/contact.html)); request item DF1-SK2).

**DF1-12 (shown right):** High Performance Dioxin/Furan Immunoassay Kit for screening analysis of 12 samples. Includes 20 antibody coated tubes and matching liquid reagents. Does not include 2378-TCDD standards.

**DF1-60:** High Performance Dioxin/Furan Immunoassay Kit for screening analysis of 60 samples. Includes 100 antibody coated tubes and matching liquid reagents. Does not include 2378-TCDD standards.



## **Sample Preparation Kits** (sold in conjunction with immunoassay kits)

**General note on components of Sample Preparation Kits:** Sample Preparation Kits include most of the materials (other than solvents, liquid oxidants, or drying agents) needed for sample processing. These items include one or more of the following: vials and other disposables for rapid extraction of solid samples, vials for extract storage and liquid phase oxidation, prepacked acid silica columns for extract cleanup, and activated carbon columns for extract cleanup. Sample preparation protocols using these kits universally allow the results to be completed the same or next day. To maximize analyte recovery, all Sample Preparation Kit items in contact with sample or extract before EIA analysis (except for wooden spatulas) are glass, stainless steel, or teflon. The extraction and cleanup protocols you will use depend on which Application Note matches your analytical goals. Each Application Note provides detailed protocol information and identifies the Sample Preparation Kit required.

**SP1-12 and SP1-60:** Sample Preparation Kits for rapid extraction of soil or other solid samples and rapid extract cleanup by liquid phase oxidation. Includes wooden spatulas, extraction vials, mixing beads, and oxidation vials for preparation of 12 or 60 samples for immunoassay analysis. Does not require SP2-ST Kit. SP1-12 Kit shown at right.



**SP2-12 and SP2-60:** Sample Preparation Kits for rapid extraction of soil or other solid samples and rapid extract cleanup by liquid phase oxidation and carbon mini-column. Includes wooden spatulas, extraction vials, mixing beads, oxidation vials, and single use carbon mini-columns for preparation of 12 or 60 samples for immunoassay analysis. Requires SP2-ST Kit (ordered separately) for positive pressure processing of carbon mini-columns. Carbon mini-column shown at right.



**SP3-12 and SP3-60:** Sample Preparation Kits for rapid extraction of soil or other solid samples and rapid extract cleanup by coupled acid silica-activated carbon mini-column. Includes wooden spatulas for weighing and extraction vials and mixing beads for extraction. Also includes prepacked single use acid silica columns and single use carbon mini-columns for cleanup of 12 or 60 extracts for immunoassay analysis. Requires SP2-ST Kit (ordered separately) for positive pressure processing of sample through coupled column system. Acid silica and carbon mini-columns of SP3/4 Kits shown at right.



**SP4-12 and SP4-60:** Sample Preparation Kits for rapid cleanup of hydrocarbon oils by coupled acid silica-activated carbon mini-column. Includes prepacked single use acid silica columns, and single use carbon mini-columns for cleanup of 12 or 60 samples for immunoassay analysis. Requires SP2-ST Kit (ordered separately) for positive pressure processing of sample through coupled column system. Acid silica and carbon mini-columns of SP3/4 Kits shown at right.

## **Reusable Sample Preparation Hardware**

**SP2-ST:** Sample Preparation Starter Kit (shown at right) for use with any SP2 or higher numbered Sample Preparation Kit. Contains non-disposable hardware only, including reusable glass reservoirs (9), polypropylene syringes, and other hardware for simultaneous processing of 6 samples through carbon mini-columns from SP2 kit. Low pressure manual processing allows rapid cleanup of a wide variety of samples for same day or next day analysis.



**SP2-RK:** High density polyethylene rack (shown at right) with stainless steel springs for holding SP2-ST glass reservoirs during sample processing. Unique custom design allows convenient simultaneous processing of 12 samples. A second rack can be used below first to hold tubes for capturing carbon column eluates. Requires stand and clamp (widely available chemistry lab hardware, not sold by CAPE Technologies).



## **Analytical Services**

CAPE Technologies will analyze your samples or sample extracts using its own Immunoassay and Sample Preparation Kits.

All specifics, including QA requirements and cost, are determined individually for each contract. More complex sample preparation, higher sensitivity, and faster turnaround times are priced correspondingly higher. Customer designated QA samples, such as field duplicates or SRM's, are considered billable samples. Otherwise, all kits, sample preparation, and CAPE Technologies internal QA materials are provided by CAPE Technologies and are included in the quoted price. Internal QA covered under quoted prices can include split/spike analysis and recovery corrected quantitation, if it is possible with the samples provided. The final report includes individual sample and batch QA data as well as a detailed description of the protocol.

Standard turnaround is 10 business days from receipt of samples. Rush turnaround (50% premium) is 5 business days from receipt of samples. Extra rush turnaround (100% premium) is 2 business days from receipt of samples. There is no minimum number of samples, but a minimum charge of \$1000 is applied to each sample type analyzed.

Samples commonly tested include soil, sediment, pulverized concrete, surface wipes, hydrocarbon oils, and water. Methods for food and feed samples are also available. Inquire for other sample types. If necessary for shipping or other purposes, samples can be provided to CAPE Technologies as extracts in either liquid or dried form. Contact CAPE Technologies to discuss your specific situation.