

# Rapid, Dual Column Analysis for Organochlorine Pesticides

## 12-Minute Analysis Using Rtx®-CLPesticides2 / Rtx®-440 Capillary GC Columns

By Jason Thomas, Environmental Innovations Chemist

- Analysis and confirmation with a single injection.
- Rapid analysis increases throughput.
- New, thicker Rtx®-CLPesticides2 phase increases column lifetime.

Capillary GC stationary phases for organochlorine pesticides (e.g. US EPA Method 8081) must possess the selectivity needed to resolve target pesticides, yet withstand the rigors of repeated injections of extracts containing harsh residuals from the sample matrix. The US EPA method also requires a suitable counterpart column for confirmation, to quantify potential pesticide “hits.” An efficient way to meet these requirements is through dual column analysis, which eliminates the need for a separate confirmation run, or GC/MS analysis. A newly enhanced version of our Rtx®-CLPesticides2 column, with dimensions of 30m x 0.32mm ID x 0.50µm (cat.# 11325) is now available for this application. The Rtx®-CLPesticides2 column, coupled with an Rtx®-440 column of the same dimensions (cat.# 12939), can provide a complete separation of the 20 most commonly analyzed organochlorine pesticides, listed in Method 8081, in less than 12 minutes (Figure 1).

The unique selectivities of the Rtx®-CLPesticides2 column and the Rtx®-440 column enable the analysis to be run quickly, with good resolution and peak shapes, as shown in Figure 1. Both columns produce similar run times, with a set of elution order inversions and, because they share a common stationary phase thickness, they should exhibit similar life expectancies. For accurate, time-saving analyses of organochlorine pesticides, we highly recommend the Rtx®-CLPesticides2 / Rtx®-440 column combination.

### Rtx®-CLPesticides2 Column (fused silica)

ID	df (µm)	temp. limits	length	cat. #
0.32mm	0.50	-60 to 320/340°C	30-Meter	11325

### Rtx®-440 Column (fused silica)

ID	df (µm)	temp. limits	length	cat. #
0.25mm	0.25	20°C to 320/340°C	30-Meter	12923

### SeCure™ “Y” Connector Kit

SeCure™ “Y” connector body, 3 knurled nuts, “Y” Universal Press-Tight® union, 3 ferrules.

Ferrules Fit Column ID	qty.	cat. #
0.28/0.32mm	kit	20277

### Organochlorine Pesticide Mix AB #2

20 components, listed in Figure 1, 8-80µg/mL in hexane:toluene (1:1), 1mL/ampul

cat. # 32292 (ea.)

### Pesticide Surrogate Mix

decachlorobiphenyl 2,4,5,6-tetrachloro-*m*-xylene

200µg/mL each in acetone, 1mL/ampul

cat. # 32000 (ea.)

**Figure 1** Sub-12-minute dual column analysis of organochlorine pesticides, using an Rtx®CLPesticides2/Rtx®-440 column pair.

