

GC Analysis of US EPA Method 8081A Chlorinated Pesticides Using Rtx[®]-CLPesticides & Rtx[®]-CLPesticides2 Columns

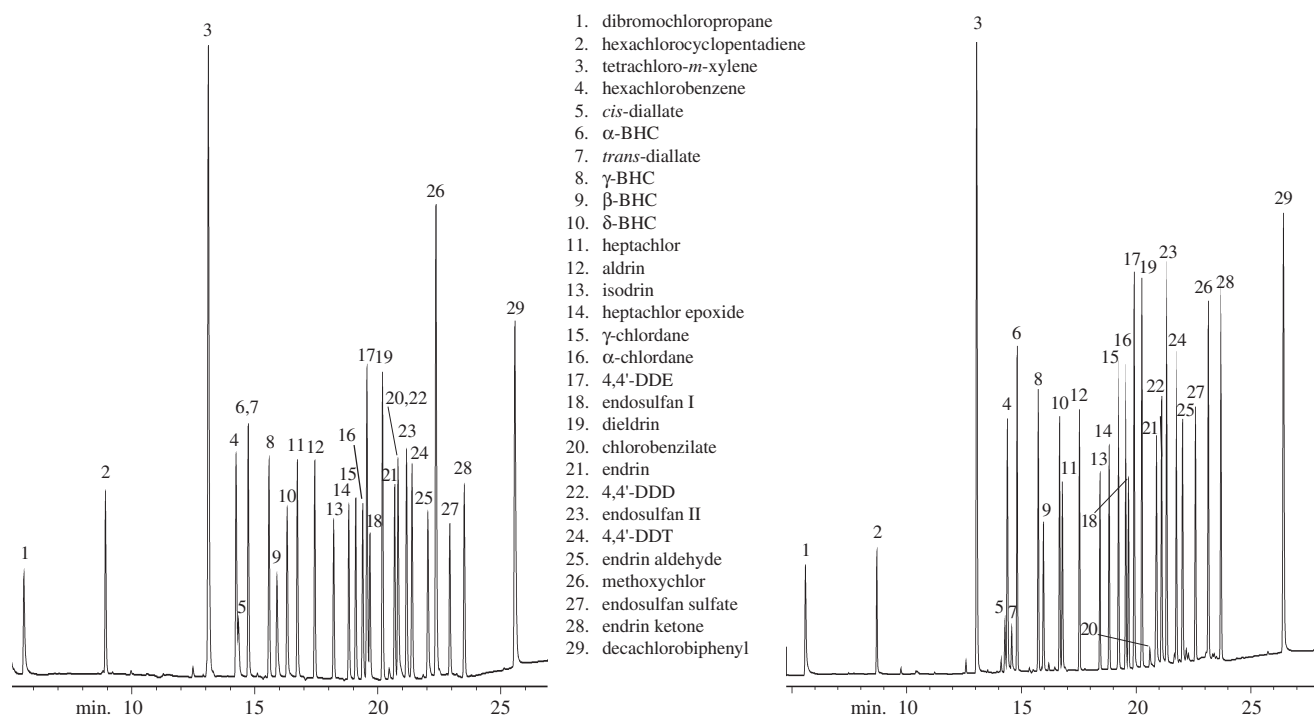
In the environmental industry, the chlorinated pesticide analytical methods often are the most challenging to perform. Analysts struggle with linearity, breakdown, and lengthy calibrations; as well as column bleed, column reactivity, and poor separation. Restek has addressed many of these issues with the development of the Rtx[®]-CLPesticides and the Rtx[®]-CLPesticides2 capillary columns. These columns were designed specifically for the separation of chlorinated pesticides, to be used in parallel for simultaneous quantitation and confirmation by gas chromatography/electron capture detection (GC/ECD). We have reported the performance and separation for these columns in several articles, but many laboratories are now dealing with the latest version of the chlorinated pesticides method—SW-846, 8081A. This method adds several new target analytes to the 20 common single-component pesticides contained in earlier versions.

The Rtx[®]-CLPesticides and Rtx[®]-CLPesticides2 achieve baseline separation of the 20 chlorinated pesticides listed in US Environmental Protection Agency (EPA) Method 8081 (Figure 1). They also have a high maximum operating temperature, excellent inertness, low bleed, and operate under the same flow and temperature conditions. This facilitates installing them as a column pair into a single injection port, thereby minimizing maintenance concerns with the injection ports.

Because the Rtx[®]-CLPesticides and Rtx[®]-CLPesticides2 columns were designed with selectivity for neutral, halogenated compounds, they are easily adapted for the analysis of the extended list of pesticides in Method 8081A. Figure 1 also shows the separation of the nine additional single-component compounds listed in Method 8081A. Using a guard column and splitting the

Figure 1

Excellent Separation of US EPA Method 8081A Chlorinated Pesticides Using Restek's Rtx[®]-CLPesticides and Rtx[®]-CLPesticides2 Columns.



30m, 0.32mm ID, 0.50 μ m Rtx[®]-CLPesticides and 30m, 0.32mm ID, 0.25 μ m Rtx[®]-CLPesticides2 columns (cat.#'s 11139 & 11324).

On-column concentration: 16-160pg; **Oven temp.:** 80°C (hold 1 min) to 300°C @ 10°C/min (hold 15 min);

Inj. port: Direct, Uniliner[®] sleeve (cat.# 20335); **Detector:** ECD, 300°C with Anode Purge;

Dead time: 1.9 min; **Head pressure:** 8.7psi (constant); **Flow rate:** 1.3mL/min @ 120°C, helium.

flow into the two columns with a glass 'Y' Press-Tight® connector, these chromatograms were acquired simultaneously.

The combination of the Rtx®-CLPesticides and Rtx®-CLPesticides2 columns provides unsurpassed performance for the analysis of chlorinated pesticides. They can be baked-out at the end of each analysis to remove high-boiling contaminants,

without degrading the stationary phase. They do not have the problems associated with cyanopropyl phases such as on-column methoxychlor and DDT breakdown, and low maximum temperature. The Rtx®-CLPesticides and Rtx®-CLPesticides2 columns are a good choice for improving resolution and capacity for the analysis of dirty extracts, and for increasing throughput for chlorinated pesticide samples.

Product Listing

Rtx®-CLPesticides Columns

ID	df (µm)	Stable to	10m	20m
0.18mm	0.14	340°C	42101	42102
ID	df (µm)	Stable to	15m	30m
0.25mm	0.25	340°C	11120	11123
0.32mm	0.50	340°C	11136	11139
0.53mm	0.50	340°C	11137	11140

Rtx®-CLPesticides2 Columns

ID	df (µm)	Stable to	10m	20m
0.18mm	0.14	340°C	42301	42302
ID	df (µm)	Stable to	15m	30m
0.25mm	0.20	340°C	11320	11323
0.32mm	0.25	340°C	11321	11324
0.53mm	0.42	340°C	11337	11340

Rtx®-CLPesticides Column Kits

These kits include both a CLPesticides and CLPesticides2 column, a Universal Angled 'Y' Press-Tight® Connector, and a 5m guard column. (Note: Columns are not preconnected in these kits.)

Description	cat.#
0.53mm ID Rtx®-CLPesticides Kit	11197
0.32mm ID Rtx®-CLPesticides Kit	11198
0.25mm ID Rtx®-CLPesticides Kit	11199

5m Phenylmethyl-Deactivated Guard Columns

ID (mm)	cat.#
0.25	10043
0.32	10044
0.53	10045

Universal 'Y' Press-Tight® Connectors

Each	3-pk.
20405	20406

Universal Angled 'Y' Press-Tight® Connectors

Each	3-pk.
20403	20404

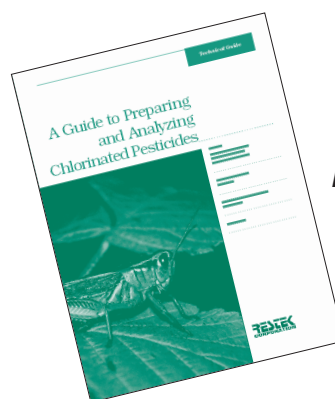
Restek Trademarks: Rtx, Uniliner.

Organochlorine Pesticide Mix AB #2

aldrin	8µg/mL	dieldrin	16µg/mL
α-BHC	8	endosulfan I	8
β-BHC	8	endosulfan II	16
δ-BHC	8	endosulfan sulfate	16
γ-BHC (lindane)	8	endrin	16
α-chlordane	8	endrin aldehyde	16
γ-chlordane	8	endrin ketone	16
4,4'-DDD	16	heptachlor	8
4,4'-DDE	16	heptachlor epoxide (B)	8
4,4'-DDT	16	methoxychlor	80

In hexane/toluene (1:1), 1mL/ampul.

	each	5-pack	10-pack
	32292	32292-510	
w/data pack	32292-500	32292-520	32392



For more information on Chlorinated Pesticide Analysis, Request Lit. cat.# 59892.

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