

# Fast GC Analysis

## of Chlorinated Pesticides

Using Restek's **Rtx<sup>®</sup>-CLPesticides & Rtx<sup>®</sup>-CLPesticides2** columns:

- Elute all 20 chlorinated pesticides in **less than 9 minutes**.
- Greater than 90% resolution between all compounds.
- Primary & confirmation analyses with just 1 injection.



Chromatography Products

[www.restek.com](http://www.restek.com)



Dear Customer,

Chlorinated pesticide analysis, specifically US EPA Method 8081, is one of the most common environmental assays performed today. It requires separation of 20 compounds, some of which are isomers or are otherwise structurally similar, and therefore difficult to separate. Here we introduce new stationary phase film thicknesses and newly optimized run conditions for complete separation of all method compounds in less than 9 minutes.

We optimized the phase ratios for these two polymers to allow rapid analysis without sacrificing column capacity—meaning much faster sample throughput for your laboratory. If you have any questions about these columns or methods, please contact Restek's Chromatography Information Services (CIS) group at (800) 356-1688, ext. 4, support@restek.com, or contact your local Restek representative.



**Jason Thomas**  
Environmental  
Innovations Chemist

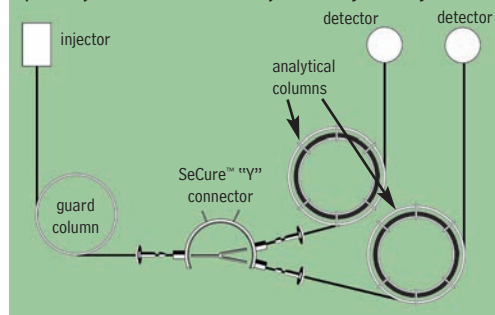
In the environmental industry, chlorinated pesticide analysis methods are often the most challenging to perform. Analysts struggle with linearity, breakdown, and lengthy calibrations, as well as column bleed, column reactivity, and poor separation. Restek now offers new stationary phase film thicknesses and optimized run conditions for our Rtx®-CLPesticides and Rtx®-CLPesticides2 columns. These improved columns provide baseline resolution of all 20 compounds in US EPA Method 8081 in less than 9 minutes (Figures 1 & 2).

The Rtx®-CLPesticides and Rtx®-CLPesticides2 columns also have a high maximum operating temperature, excellent inertness, and low bleed. These columns are stable at high temperatures and can be baked out at the end of each analysis to remove high boiling point contaminants without degrading the stationary phase. This stability at high temperatures reduces interferences and improves analytical accuracy.

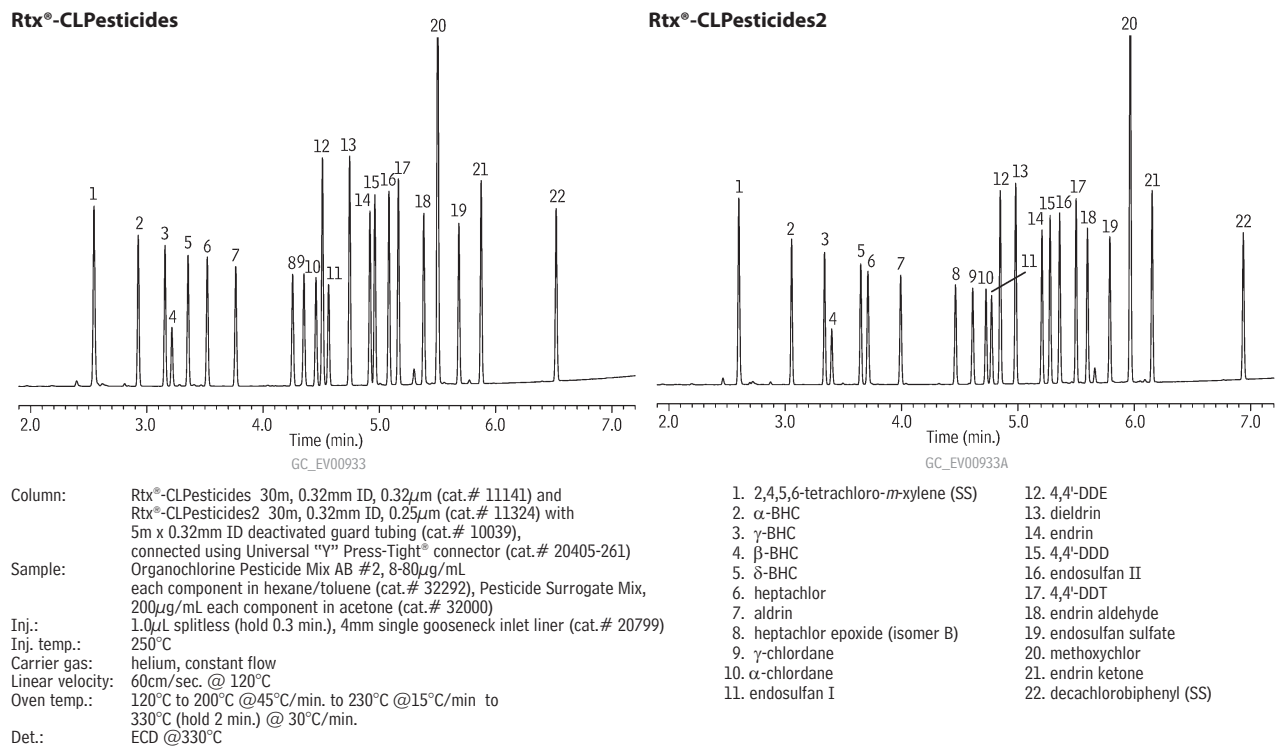
Because the Rtx®-CLPesticides and Rtx®-CLPesticides2 columns operate under the same flow and temperature conditions, they can be installed as a column pair into a single injection port. This dual column configuration allows primary and confirmation analysis from a single injection, and reduces injection port maintenance issues (Figure 3).

The Rtx®-CLPesticides and Rtx®-CLPesticides2 columns are an excellent choice for improving resolution and capacity for the analysis of dirty extracts, and for increasing sample throughput for chlorinated pesticide methods. Try our newly optimized column pairs for fast, reliable chlorinated pesticide results.

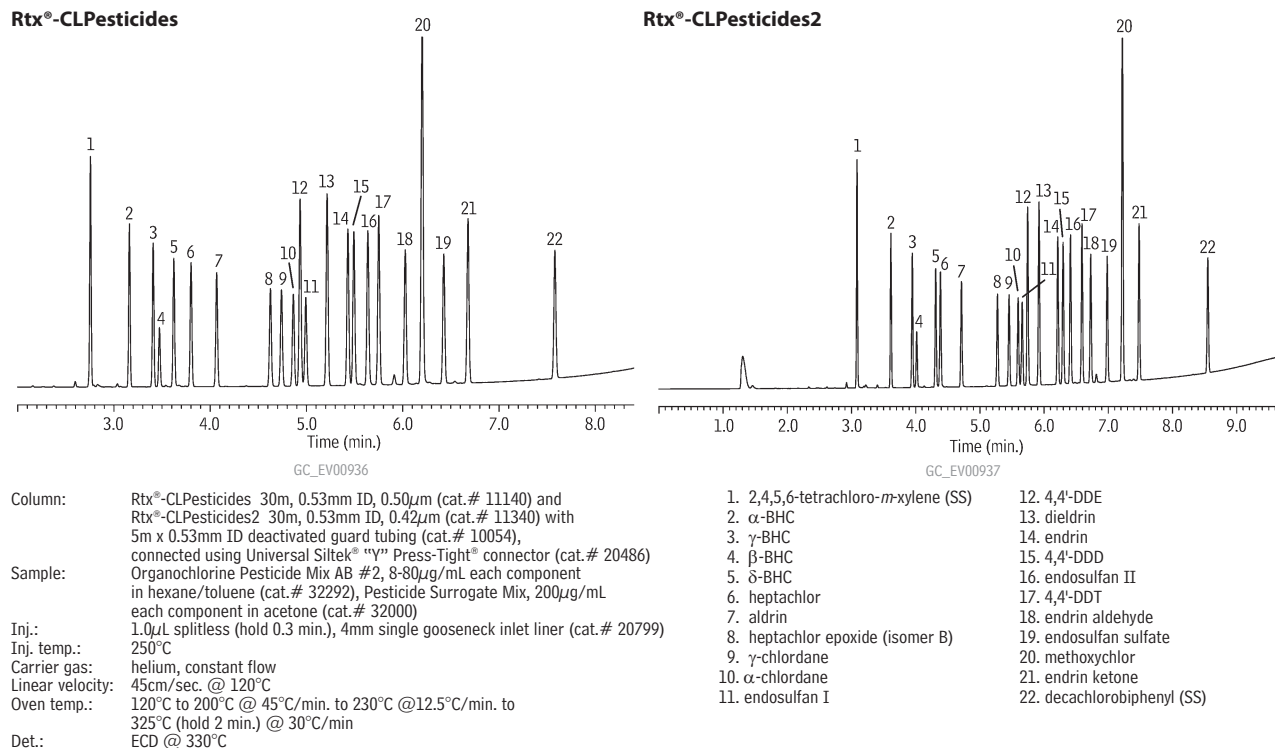
**Figure 3** Save time with a dual column system—primary & confirmation analyses with just 1 injection.



**Figure 1** Baseline resolution of chlorinated pesticides on the 0.32mm ID Rtx®-CLPesticides and Rtx®-CLPesticides2 column pair. Primary and confirmation analysis in less than 7 minutes.




**Figure 2** Excellent resolution of chlorinated pesticides on the 0.53mm ID Rtx®-CLPesticides and Rtx®-CLPesticides2 column pair. Primary and confirmation analysis from a single injection.



# Restek Columns Satisfy Your Need for Speed!

## Rtx®-CLPesticides Columns (fused silica)

ID	df (µm)	temp. limits	length	cat. #
0.32mm	0.32	-60 to 320/340°C	30-Meter	11141 
0.53mm	0.50	-60 to 300/320°C	30-Meter	11140

## Rtx®-CLPesticides2 Columns (fused silica)

ID	df (µm)	temp. limits	length	cat. #
0.32mm	0.25	-60 to 320/340°C	30-Meter	11324
0.53mm	0.42	-60 to 300/320°C	30-Meter	11340

## Rtx®-CLPesticides Kits

(Note: Columns are not preconnected in these kits.)

0.32mm ID	Rtx®-CLPesticides Kit	cat. #
		11196 (kit) 

**Kit includes:** 30m, 0.32mm ID, 0.32µm Rtx®-CLPesticide column, 30m, 0.32mm ID, 0.25µm Rtx®-CLPesticides2 column, Universal Angled "Y" Press-Tight® connector, & a 5m, 0.32mm ID Siltek® guard column.

0.53mm ID	Rtx®-CLPesticides Kit	cat. #
		11197 (kit)

**Kit includes:** 30m, 0.53mm ID, 0.50µm Rtx®-CLPesticide column, 30m, 0.53mm ID, 0.42µm Rtx®-CLPesticides2 column, Universal Angled "Y" Press-Tight® connector, & a 5m, 0.53mm ID IP Deactivated guard column.

## Siltek®-Deactivated Guard Columns/ Transfer Lines

(fused silica)

Nominal ID	Nominal OD	5-Meter	10-Meter
0.25mm	0.37 ± 0.04mm	10026	10036
0.32mm	0.45 ± 0.04mm	10027	10037

## also available

Restek offers a complete line of inlet liners for Agilent, Shimadzu, Varian, PerkinElmer, and Thermo Scientific instruments. Call 800-356-1688 or 814-353-1300, or your Restek representative for details.

## SeCure™ "Y" Connector Kits

Combine the simplicity of a "Y" Press-Tight® connector with the strength of a metal union.

Kits include: SeCure™ "Y" connector body, 3 knurled nuts, "Y" Universal Press-Tight® union, 3 ferrules.

Description	Ferrules Fit Column ID	qty.	cat. #
SeCure™ "Y" Connector Kit	0.18/0.25/0.28mm	kit	20276
SeCure™ "Y" Connector Kit	0.32mm	kit	20277
SeCure™ "Y" Connector Kit	0.45/0.53mm	kit	20278
Knurled nut		3-pk.	20279

## Organochlorine Pesticide Mix AB #2

(20 components)

µg/mL			
aldrin	8	dieldrin	16
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

cat. # 32292 (ea.)

## Pesticide Surrogate Mix

decachlorobiphenyl	2,4,5,6-tetrachloro- <i>m</i> -xylene
200µg/mL each in acetone, 1mL/ampul	
cat. # 32000 (ea.)	

## Universal "Y" Press-Tight® Connectors

- Split sample flow to two columns and perform confirmation analysis with a single injection.
- Better recovery of polar and non-polar compounds.
- Fit column ODs from 0.33–0.74mm (Restek 0.1mm–0.53mm ID).



Description	ea.	3-pk.
Deactivated Universal "Y"		
Press-Tight® Connector	20405-261	20406-261
Siltek® Treated Universal "Y"		
Press-Tight® Connector	20485	20486



The SeCure™ "Y" connector's open design allows visual confirmation of the seal.

## save money!

Purchase Rtx®-CLPesticides Kits and save! Additional column dimensions are available.

Call 800-356-1688, ext. 4, or your Restek representative for details!

## free literature



Inlet Supplies Guide

59893C-INT  
(international)

Restek Trademarks:  
Press-Tight, Rtx, SeCure,  
Siltek, Restek logo.



Lit. Cat.# 59547A-INT

© 2007 Restek Corporation.

Restek U.S. • 110 Benner Circle • Bellefonte, PA 16823 • 814-353-1300 • 800-356-1688 • fax: 814-353-1309 • www.restek.com

Restek France • phone: 33 (0)1 60 78 32 10 • fax: 33 (0)1 60 78 70 90 • e-mail: restek@restekfrance.fr

Restek Ireland • phone: 44 2890 814576 • fax: 44 2890 814576 • e-mail: restek@restek.com

Thames Restek U.K. LTD • phone: 44 1494 563377 • fax: 44 1494 564990 • e-mail: sales@thamesrestek.co.uk

Restek GmbH • phone: +49 (0) 6172 2797 0 • fax: +49 (0) 6172 2797 77 • e-mail: info@restekgmbh.de

