

**NEW—**  
Optimized Film  
Thicknesses!

## 13 Minute Chlorophenoxyacid Herbicides Analysis

On New Rtx®-CLPesticides & Rtx®-CLPesticides2 Columns

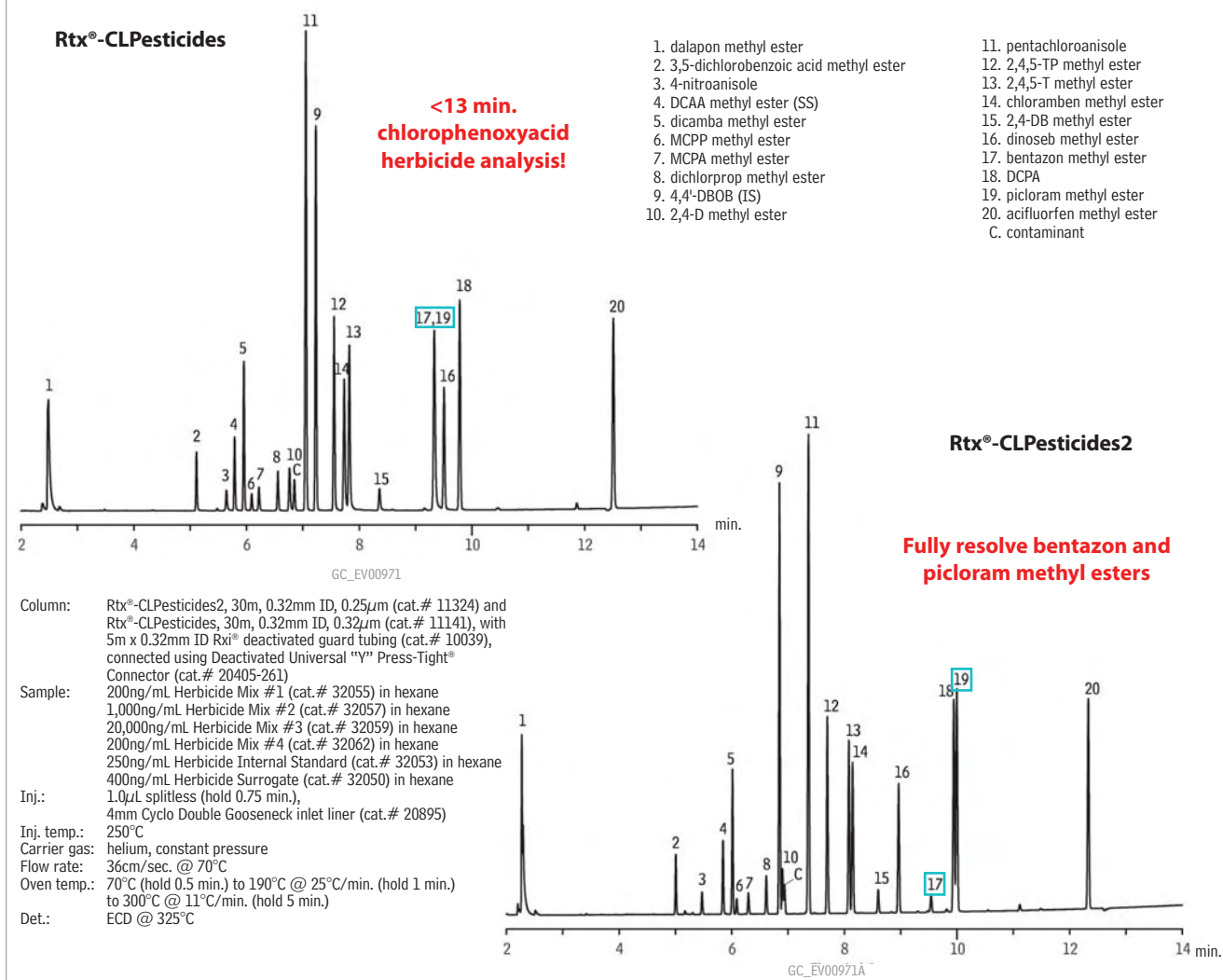
By Jason Thomas, Environmental Innovations Chemist

- Higher throughput compared to typical methods of 20 minutes or more.
- Use one column pair for multiple dual column ECD methods.
- Versatility and durability to harsh samples lead to longer life and less down time.

The analysis of chlorophenoxyacid herbicides is a very common assay performed routinely in most environmental laboratories today. Chlorophenoxyacid herbicides, as a group, are used to prevent the growth of broadleaf plants in agricultural fields. EPA Method 8151A is commonly used for chlorophenoxyacid herbicide analysis and involves extraction and derivatization to methyl ester form. GC analysis using an electron capture detector (ECD) is the analytical procedure of choice, although mass spectrometry is also used. ECD detection requires the use of second column confirmation for quantification of target analytes.

The Rtx®-CLPesticides and Rtx®-CLPesticides2 column pair is an excellent choice for chlorophenoxyacid analysis. Now, with an optimized film thickness for the 0.32mm ID version, this difficult analysis can be made in less than 13 minutes on both the primary and confirmation columns. Near baseline resolution is achieved for all analytes except for bentazon/picloram on the Rtx®-CLPesticides column; however, this pair is fully resolved on the Rtx®-CLPesticides2 column (Figure 1). The Rtx®-CLPesticides and Rtx®-CLPesticides2 column pair is an excellent choice for chlorophenoxyacid herbicide analysis due to the unique selectivity, low bleed, and durability of the columns. The Rtx®-CLPesticides column pair can also be used for other environmental ECD methods, including chlorinated pesticide analysis.

**Figure 1** Excellent resolution of chlorophenoxyacid herbicides on the Rtx®-CLPesticides column pair.



### Rtx®-CLPesticides Columns (fused silica)

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

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

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

### Rxi® Guard/Retention Gap Columns (fused silica)

Nominal ID	Nominal OD	5-Meter	5-Meter/6-pk.	10-Meter	10-Meter/6-pk.
0.32mm	0.45 ± 0.04mm	10039	10039-600	10064	10064-600

### Universal "Y" Press-Tight® Connectors

An alternative method of performing dual-column confirmational analyses!

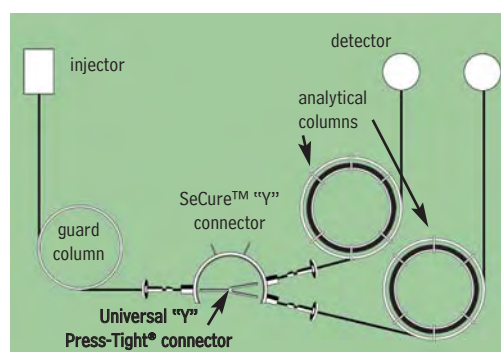
Description	ea.	3-pk.
Universal "Y" Press-Tight® Connector	20405	20406
Deactivated Universal "Y" Press-Tight® Connector	20405-261	20406-261
Siltek® Treated Universal "Y" Press-Tight® Connector	20485	20486



**Dual-column confirmational analysis with a single injection—one of the SeCure™ "Y" connector's many uses.**

for **more** info

For more information on Restek's Secure™ "Y" connector, download a free copy of lit. cat. #598788A from [www.restek.com](http://www.restek.com).



### Herbicide Mix #1 (7 components)

#### Derivatized Form:

2,4-D methyl ester	dicamba methyl ester
2,4-DB methyl ester	dichlorprop methyl ester
2,4,5-T methyl ester	dinoseb methyl ether
2,4,5-TP methyl ester	

200μg/mL each in hexane, 1mL/ampul  
cat. # 32055

### Herbicide Mix #2

#### Derivatized Form:

dalapon methyl ester  
2,000μg/mL in hexane, 1mL/ampul  
cat. # 32057

1,000μg/mL in methanol, 1mL/ampul  
cat. # 32254

### Herbicide Mix #3

#### Derivatized Form:

MCPA methyl ester                      MCPP methyl ester  
20,000μg/mL each in hexane, 1mL/ampul  
cat. # 32059

### Herbicide Mix #4 (8 components)

#### Derivatized Form:

acifluorfen methyl ester	methyl ester
bentazon methyl ester	4-nitroanisole
chlорamben methyl ester	pentachloroanisole
DCPA (Dacthal®)	picloram methyl ester
3,5-dichlorobenzoic acid	

200μg/mL each in hexane, 1mL/ampul  
cat. # 32062

### Splitless Liners for Agilent GCs

ID* x OD & Length (mm)	qty.	cat. #
Cyclo Double Gooseneck (4mm)		
4.0 ID x 6.5 OD x 78.5	ea.	20895
4.0 ID x 6.5 OD x 78.5	5-pk.	20896
4.0 ID x 6.5 OD x 78.5	25-pk.	20997

\*Nominal ID at syringe needle expulsion point.

### Herbicide Internal Standard

4,4'-dibromooctafluorobiphenyl

250μg/mL in hexane, 1mL/ampul  
cat. # 32053

2,000μg/mL in methylene chloride, 1mL/ampul  
cat. # 31040

2,000μg/mL in methyl *tert*-butyl ether, 1mL/ampul  
cat. # 31856

### Herbicide Surrogate

#### Derivatized Form:

2,4-dichlorophenyl acetic acid methyl ester (DCAA methyl ester)  
200μg/mL in hexane, 1mL/ampul  
cat. # 32050

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