Rtx-CLPesticides and Rtx-CLPesticides2 Columns

cat.#s 11123, 11139, 11140, 11323, 11324, 11340

Congratulations on your purchase of a Restek Rtx-CLPesticides/Rtx-CLPesticides2 GC column. With their unique selectivities for the separation of organochlorine pesticides, these columns help you achieve faster run times, offer differing retention times and elution orders for confirmatory analysis, and easily meet select U.S. EPA and other method criteria for organochlorine pesticides. Continue reading for instructions on column conditioning prior to use and operation.

Column Conditioning

For optimal column performance, Restek recommends that you condition new Rtx-CLPesticides and Rtx-CLPesticides2 columns at their maximum temperature until the desired baseline level is reached; to get the best trace-level results from your columns, we recommend overnight conditioning. Detector temperatures should also be elevated (not to exceed the maximum temperature of the column) during column conditioning. Maximum column temperatures can be found on the column box and on **www.restek.com** by searching for your column cat.#. *Always thoroughly leak check your system with a Restek electronic leak detector (cat.# 22655) after installation to avoid column damage.* Use of a heated purifier on the carrier gas line will prevent oxygen and moisture from damaging the columns and will help stabilize the GC baseline.

Column Operation and Results

Whether you use a 0.25, 0.32, or 0.53 mm ID, Rtx-CLPesticides and Rtx-CLPesticides2 columns offer improved resolution and faster organochlorine pesticide analysis by GC-µECD. On this sheet, you will find optimized, easily reproducible applications developed by Restek chemists for all three column set IDs as well as recommended conditions (Figures 1, 2, and 3). To obtain the same elution orders and avoid misidentifying peaks, it is important to follow the conditions as they are listed. Deviations from temperature programs or flow rates can cause retention time and elution order changes.

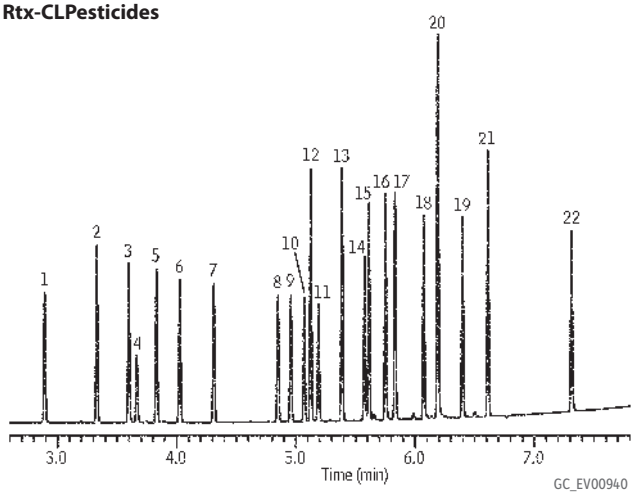
NOTE: Dirty or derivatized samples can contaminate a column. Restek does not recommend analyzing trace-level pesticide samples following derivatized samples (e.g., Methods 8151A and 552.2) without performing inlet maintenance. Standard steps include trimming the guard column and changing the inlet liner, seal, and septum.

See how we compare to other columns
www.restek.com/CLP7

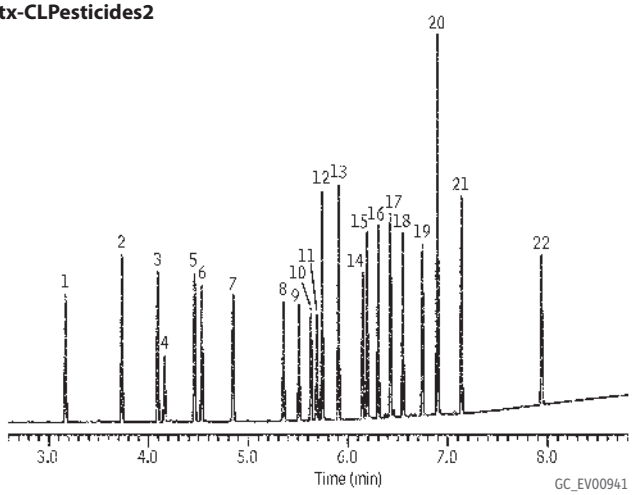
Recommended Conditions for Organochlorine Pesticide Analysis Using Rtx-CLPesticides and Rtx-CLPesticides2 Column Sets

Figure 1: 0.25 mm ID column set

Rtx-CLPesticides



Rtx-CLPesticides2



Columns: Rtx-CLPesticides 30 m, 0.25 mm ID, 0.25 µm (cat.# 11123) and Rtx-CLPesticides2 30 m, 0.25 mm ID, 0.20 µm (cat.# 11323) using Rxi guard column 5 m, 0.25 mm ID (cat.# 10029) with Siltek-treated universal "Y" Press-Tight connector (cat.# 20486); **Sample**: Organochlorine pesticide mix AB #2 (cat.# 32292), Pesticide surrogate mix, EPA 8080, 8081 (cat.# 32000); **Injection:** Inj. Vol.: 0.5 µL splitless (hold 0.5 min), Liner: Cyclo double taper (2 mm) (cat.# 20908), Inj. Temp.: 250 °C; **Oven:** Oven Temp: 125 °C to 200 °C at 45 °C/min to 230 °C at 12.5 °C/min to 330 °C at 30 °C/min (hold 2 min); **Carrier Gas:** He, constant flow, Linear Velocity: 41 cm/sec @ 125 °C; **Detector:** ECD @ 330 °C; **Notes**: This chromatogram was obtained using an Agilent µ-ECD. To obtain comparable results, you will need to employ a µ-ECD in addition to dual columns connected to a 5-meter guard column using a "Y" Press-Tight connector.

1. 2,4,5,6-Tetrachloro-m-xylene (SS)
2. α-BHC
3. γ-BHC
4. β-BHC
5. δ-BHC
6. Heptachlor
7. Aldrin
8. Heptachlor epoxide (isomer B)
9. *trans*-Chlordane*
10. *cis*-Chlordane*
11. Endosulfan I
12. 4,4'-DDE
13. Dieldrin
14. Endrin
15. 4,4'-DDD
16. Endosulfan II
17. 4,4'-DDT
18. Endrin aldehyde
19. Endosulfan sulfate
20. Methoxychlor
21. Endrin ketone
22. Decachlorobiphenyl (SS)

* For information regarding the nomenclature used for *cis*-chlordane and *trans*-chlordane, visit www.restek.com/chlordane-notice

Restek's *EZ*GC online software lets you add new compounds to existing GC methods quickly and with confidence.

- **Chromatogram modeler**
- **Method translator**
- **Flow calculator**

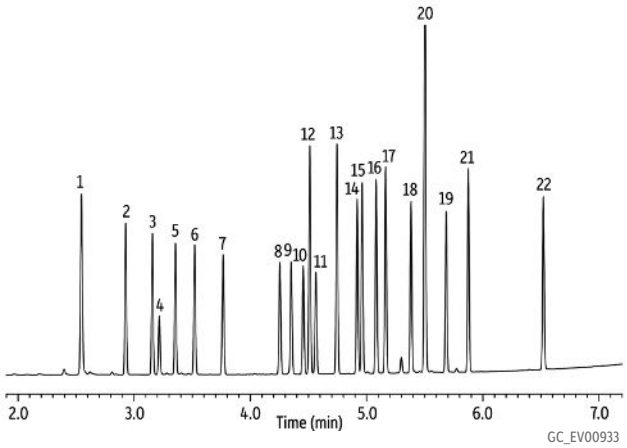
www.restek.com/ezgc

RESTEK
Pure Chromatography

Recommended Conditions for Organochlorine Pesticide Analysis Using Rtx-CLPesticides and Rtx-CLPesticides2 Column Sets *(continued)*

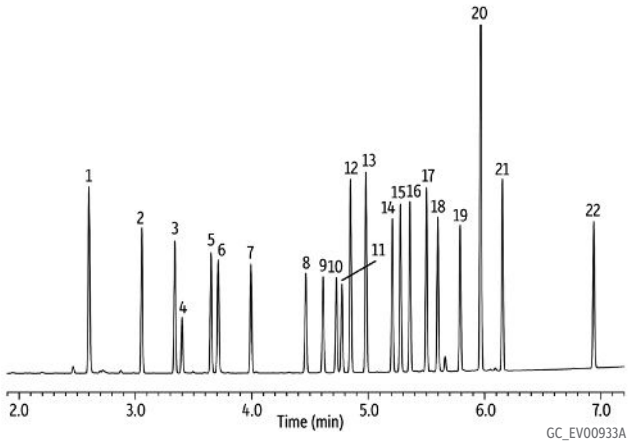
Figure 2: 0.32 mm ID column set

Rtx-CLPesticides



GC_EV00933

Rtx-CLPesticides2

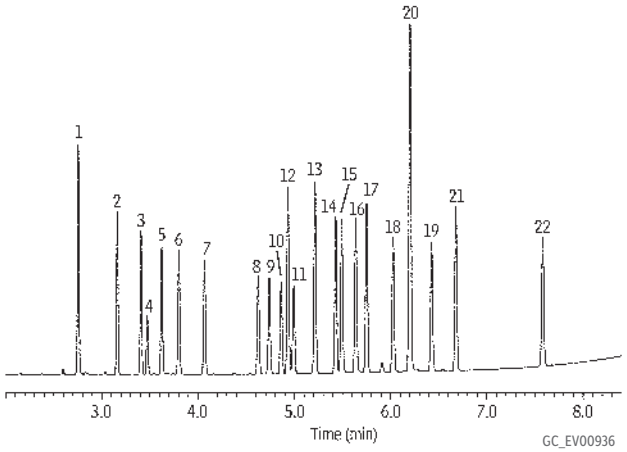


GC_EV00933A

Columns: Rtx-CLPesticides 30 m, 0.32 mm ID, 0.32 µm (cat.# 11141) and Rtx-CLPesticides2 30 m, 0.32 mm ID, 0.25 µm (cat.# 11324) using Rxi guard column 5 m, 0.32 mm ID (cat.# 10039) with deactivated universal "Y" Press-Tight connector (cat.# 20405-261); **Sample**: Organochlorine pesticide mix AB #2 (cat.# 32292), Pesticide surrogate mix, EPA 8080, 8081 (cat.# 32000); **Injection:** Inj. Vol.: 1 µL splitless (hold 0.3 min), Liner: Splitless taper (4 mm) (cat.# 20799), Inj. Temp.: 250 °C; **Oven:** Oven Temp: 120 °C to 200 °C at 45 °C/min to 230 °C at 15 °C/min to 330 °C at 30 °C/min (hold 2 min); **Carrier Gas**: He; **Detector**: µ-ECD @ 330 °C; **Notes**: Instrument was operated in constant flow mode. Linear velocity: 60 cm/sec @ 120 °C. This chromatogram was obtained using an Agilent µ-ECD. To obtain comparable results, you will need to employ a µ-ECD in addition to dual columns connected to a 5-meter guard column using a "Y" Press-Tight connector.

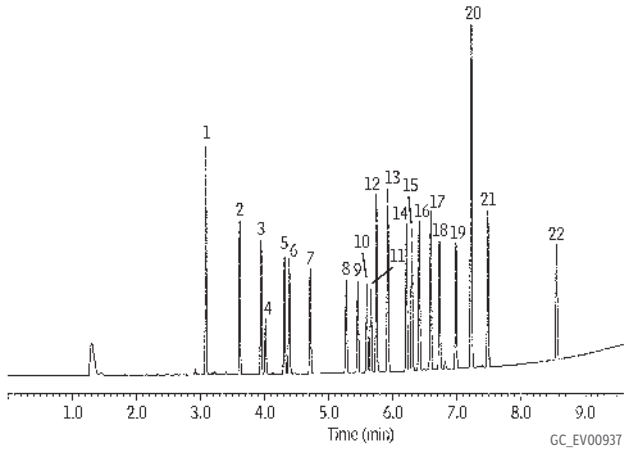
Figure 3: 0.53 mm ID column set

Rtx-CLPesticides



GC_EV00936

Rtx-CLPesticides2



GC_EV00937

Columns: Rtx-CLPesticides 30 m, 0.53 mm ID, 0.50 µm (cat.# 11140) and Rtx-CLPesticides2 30 m, 0.53 mm ID, 0.42 µm (cat.# 11340) using Rxi guard column 5 m, 0.53 mm ID (cat.# 10054) with Siltek-treated universal "Y" Press-Tight connector (cat.# 20486); **Sample:** Organochlorine pesticide mix AB #2 (cat.# 32292), Pesticide surrogate mix, EPA 8080, 8081 (cat.# 32000); **Injection:** Inj. Vol.: 1.0 µL splitless (hold 0.3 min), Liner: Splitless taper (4 mm) (cat.# 20799), Inj. Temp.: 250 °C; **Oven:** Oven Temp: 120 °C to 200 °C at 45 °C/min to 230 °C at 12.5 °C/min to 325 °C at 30 °C/min (hold 2 min); **Carrier Gas**: He, constant flow, Linear Velocity: 45 cm/sec @ 120 °C; **Detector**: µ-ECD @ 330 °C; **Notes**: This chromatogram was obtained using an Agilent µ-ECD. To obtain comparable results, you will need to employ a µ-ECD in addition to dual columns connected to a 5-meter guard column using a "Y" Press-Tight connector.

Questions about this or any other Restek product?
Contact us or your local Restek representative (www.restek.com/contact-us).

www.restek.com

#124-01-004 Rev. date: 05/19

Pure Chromatography