VF-Pesticides FactorFour GC Columns
FOR PESTICIDE RESIDUE ANALYSIS AT PICOGRAM LEVELS

Key benefits include:
- Each column is individually tested with key pesticides, including endrin and aldrin, before shipment, ensuring optimal performance and consistency of results.
- Columns are highly inert for trace pesticide determination, affording better detection limits.
- Columns are ultra low bleed.
- Proven performance with ECD and MS detection.

Analyses at extremely low, trace level, concentrations are easy with the new VF-Pesticides columns, regardless of whether your method specifies ECD or MS detection.

VF-Pesticides columns benefit from ultra-low bleed FactorFour technology to improve sensitivity and eliminate other problems with column bleed. The VF-1701 Pesticides column demonstrates up to 8 x lower bleed than other columns used for pesticide analysis, as shown in Figure 1. Combined with an extremely inert surface, pesticide residues can be accurately detected down to 3 pg level, as shown in Figure 2.

VF-5 Pesticides
VF-1701 Pesticides

The new FactorFour VF-Pesticides columns have been specifically designed for analyzing trace levels of pesticide residues.

Figure 1. Bleed comparison of the new VF-1701 Pesticides column and an alternate pesticides column.

![Graph showing bleed comparison]

The VF-1701 Pesticides column shows an 8 x lower bleed than the alternate column. Column: VF-1701 Pesticides 30 m x 0.25 mm df = 0.25 µm, Part number CP9070 , Temperature: 100 °C + 10 °C/min → 280 °C, Detector: FID.

Typical Application Areas
Pesticide residues in food and environmental samples including EPA methods 8081 and 625.
Figure 2. Analysis of Pesticides using EPA 8081 with ECD. 
(a) VF-1701 Pesticides.

(b) VF-5 Pesticides.

Figure 2 shows EPA method 8081 using a dual column configuration with ECD detection. The VF-Pesticides columns combine excellent inertness with ultra low bleed to enable fast and accurate determination of endrin and DDT at 3pg levels. Technique: GC, Varian CP-3800, Column: (a) VF-1701 Pesticides 30 m x 0.32 mm df = 0.25 µm, Part No. CP9071, (b) VF-5 Pesticides 30 m x 0.32 mm df = 0.25 µm, Part No. CP9075, Temperature: 60 °C (hold 30 sec.) à 150 °C @ 50 °C/min à 275 °C @ 8º C/min, Carrier Gas: Helium, 150kPa, Injector: Split/Splitless, in splitless mode, T = 250 °C, Detector: ECD, T = 325 °C, Sample Size: 0.5 µL, Sample: Pesticide 8081 Standard Mix, conc.: 6 ng/mL.

Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Bleed pA</th>
<th>Tmax iso/ prog (°C)</th>
<th>T-min (°C)</th>
<th>As p.p'-DDT</th>
<th>N/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP9070</td>
<td>VF-1701 Pesticides 0.25 mm x 0.25 µm x 30 m</td>
<td>1.00</td>
<td>280/300</td>
<td>-20</td>
<td>1.25</td>
<td>3500</td>
</tr>
<tr>
<td>CP9071</td>
<td>VF-1701 Pesticides 0.32 mm x 0.25 µm x 30 m</td>
<td>1.00</td>
<td>280/300</td>
<td>-20</td>
<td>1.25</td>
<td>3500</td>
</tr>
<tr>
<td>CP9074</td>
<td>VF-5 Pesticides 0.25 mm x 0.25 µm x 30 m</td>
<td>1.00</td>
<td>325/350</td>
<td>-60</td>
<td>1.25</td>
<td>3500</td>
</tr>
<tr>
<td>CP9075</td>
<td>VF-5 Pesticides 0.32 mm x 0.25 µm x 30 m</td>
<td>1.00</td>
<td>325/350</td>
<td>-60</td>
<td>1.25</td>
<td>2667</td>
</tr>
</tbody>
</table>

Varian, Inc.
www.varianinc.com
North America: 800.926.3000, 925.939.2400
Europe The Netherlands: 31.118.67.1000
Asia Pacific Australia: 613.9560.7133
Latin America Brazil: 55.11.3845.0444
Other sales offices and dealers throughout the world—check our Web site

GC • LC • MS • GPC/SEC • AA • ICP • UV-Vis-NIR • FT-IR • Fluorescence • Dissolution • NMR • MRI • FTMS • Consumables • Data Systems

SI-0742/A/2.07 Printed in UK