

Narrow Bore Capillary FID GC System



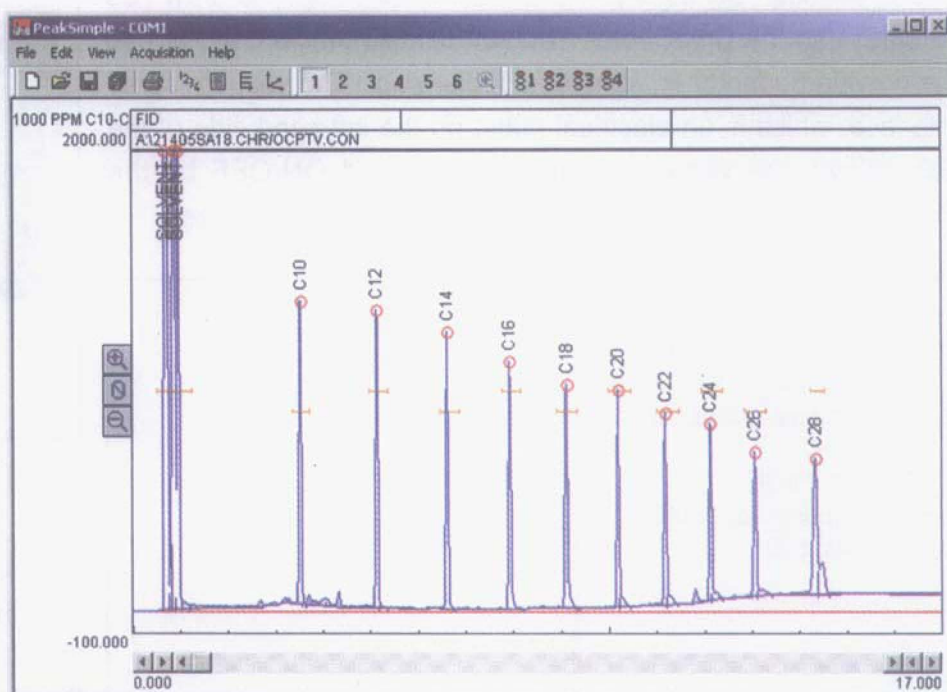
- *FID Detector*
- *On-Column PTV Injector*
- *30 meter Narrow Bore (0.25mm ID) Capillary Column*
- *Built-in, "whisper quiet" Air Compressor*
- *1 Channel PeakSimple Data System*
- ...on the compact 8610C chassis*

The Narrow Bore Capillary FID GC System includes everything you need for ultra high performance narrow bore capillary chromatography. In addition to a wide range of general gas chromatography applications, the Narrow Bore Capillary FID GC System is excellent for environmental testing and quality control applications.

The On-Column Programmable Temperature Vaporization (OCPTV) injector allows larger and simpler liquid injections than are otherwise possible with narrow bore columns. Like a traditional heated Split/Splitless injector, the OCPTV has a split vent and needle valve for venting solvent while concentrating sample. Unlike a heated Split/Splitless injector, the OCPTV vents the solvent without rapid vaporization. Carrier gas flow is programmable from the PeakSimple data system.

The OCPTV discriminates in favor of semivolatile analytes with boiling points higher than C_8 . The chromatogram at right shows an analysis of diesel range organics (C_{10} - C_{28}). The OCPTV causes the analytes to focus on the analytical column, resulting in sharp, well-defined peaks.

Traditional split injectors can usually only handle 1-2 μL injections. The OCPTV's ability to accommodate larger (1-20 μL) injections allows for detection limits an order of magnitude lower. For more information on the OCPTV, see page 59.

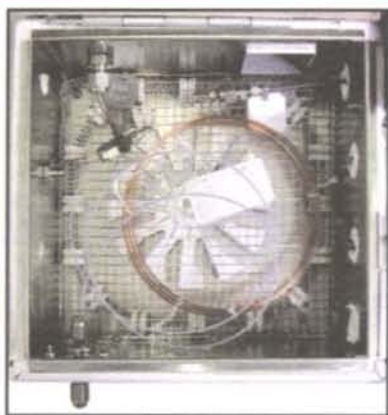


8610-5405 Narrow Bore Capillary FID GC System



OPTIONS & UPGRADES: additional detectors with 4 channel serial or 6 channel USB PeakSimple data system, Methanizer, gas sampling valves, additional column(s), H_2 -50XR hydrogen generator, autosampler.
(VOLTAGE: for 110VAC, use 8610-5405-1; for 220VAC, use 8610-5405-2)

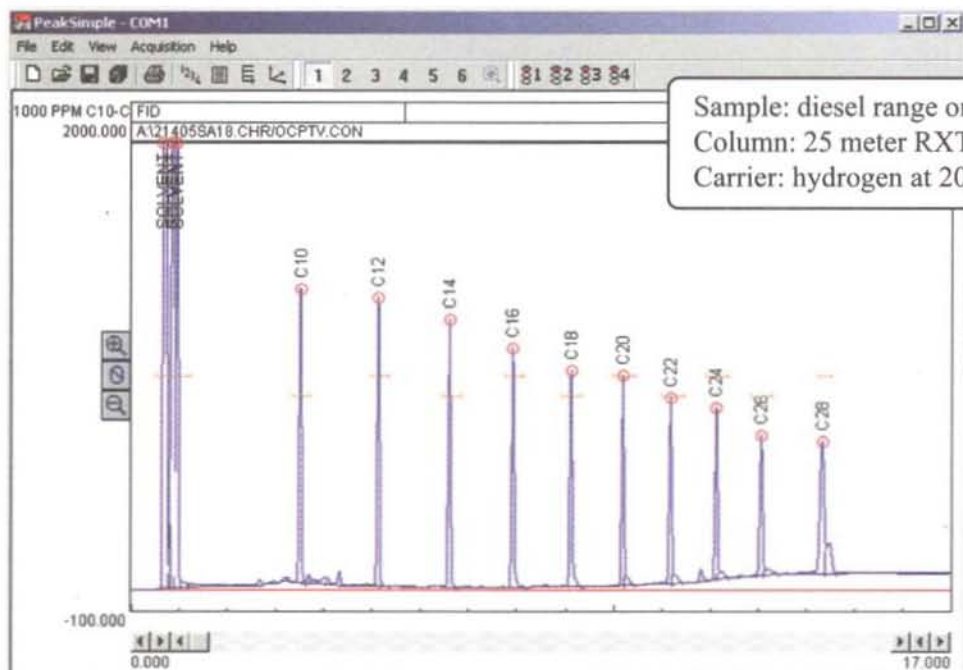
On-Column PTV Injector



- *Inject Larger Volumes onto Narrow Bore Columns*
- *Concentrate Sample and Focus Peaks*
- *Simpler than Split/Splitless Injectors*
- *Less Bulky than Conventional PTVs*
- *Great for Semivolatile Samples*

The On-Column PTV is a resistively heated precolumn, which is connected to your narrow bore column with a special, electrically insulated split "T" inside the GC column oven. The 5 micron nonpolar phase in the OCPTV precolumn has a high capacity to absorb high boiling compounds, and is stable at high temperatures. Like in-tube SPME, the precolumn discriminates in favor of high boiling semivolatile analytes, concentrating them in the phase. Like the Split/Splitless injector, the OCPTV has a split vent and needle valve for venting solvent while concentrating sample. Unlike a normal Heated Split/Splitless injector, the OCPTV vents the solvent without expanding it to a gas. Therefore, the OCPTV is capable of larger liquid injections than a regular heated split/splitless injector.

The GC operator injects sample via syringe through the on-column injection port with the split vent open to vent the solvent. After injection and solvent venting, the precolumn heats up while the carrier gas flows through it to sweep focused analytes from the precolumn to the analytical column. At this point, the precolumn is hotter than the column oven. The temperature difference between the hotter precolumn and cooler analytical column causes the analytes to focus on the analytical column, resulting in sharp peaks on the chromatogram.



Sample: diesel range organics (DRO) in hexane
Column: 25 meter RXT-1 0.25 μ m
Carrier: hydrogen at 20psi

This chromatogram was generated by an SRI GC equipped with an OCPTV injector and an FID detector. A 25 meter narrow bore capillary column was used to separate 100ppm diesel range organics (DRO).

8690-0037

On-Column PTV Injector for GC