

Redesigned Rt-QPLOT™ GSC Columns

For Improved Inertness, Reproducibility, and Column Lifetime

by Barry Burger, Petroleum Chemist

- Sharp peaks and excellent resolution for alcohols.
- Effective particle bonding eliminates the need for particle traps.
- Stable to 310°C, for effective reconditioning.

The most common mode of gas chromatography, gas-liquid chromatography (GLC), has limitations in analyses of gases and highly volatile analytes. Subambient temperatures often are required in these applications, and cryogenic cooling systems are costly and inconvenient. In gas-solid chromatography (GSC) these small molecules are absorbed into the pore structure of the packing material, which provides strong retention and unique selectivity. By this approach, difficult-to-separate gaseous or highly volatile analytes can be separated at above ambient temperatures.

Just as capillary columns offer advantages over packed GLC columns, porous layer open tubular columns—PLOT columns—offer significant advantages over packed GSC columns. PLOT columns provide faster and more sensitive analyses. Their open design gives PLOT columns greater permeability, and their narrow diameter

ensures sharper peaks. The open construction affords a smaller pressure drop per unit length, so longer columns can be used. This means much higher column efficiency and, therefore, superior resolution.

Rt-QPLOT™, Rt-SPLOT™, and Rt-UPLOT™ columns are porous polymer based PLOT columns that incorporate polar functional groups in a styrene/divinylbenzene matrix. The least polar of these, the nonpolar Rt-QPLOT™ columns, are made with divinylbenzene. Rt-QPLOT™ columns are well suited to a wide variety of ambient-temperature analyses, including hydrocarbon mixtures and solvents. An Rt-QPLOT™ column is an excellent choice for analyzing alcohols (Figure 1) or polar solvents (Figure 2). Additional separations on Rt-QPLOT™ columns are in the GC Applications section of our catalog (Permanent Gases, Hydrocarbon Gases, and Solvents sub-sections), and on our website.

Why Use RESTEK PLOT Columns?

1. Uniform, highly consistent porous materials, for the most efficient and consistent analyses.
2. Advanced manufacturing technology and demanding quality assurance ensure highly reproducible quality.
3. Choice of alumina, three porous polymers, and molecular sieve—you can perfectly match a column to your application.
4. Highly efficient particle bonding - no loose particles to enter your system, no need for particle traps.

An Rt-QPLOT™ column requires no particle trap and exhibits minimum bleed (<20pA at 310°C). Unlike alumina or molecular sieve PLOT columns, porous polymer PLOT columns are unaffected by moisture, and thus are particularly useful for applications in which water is likely to be part of the sample.

We think you will find the performance, column lifetime, and reproducibility of our PLOT columns superior to any other PLOT columns available.

Figure 1

Sharp peaks and excellent resolution of alcohols on an Rt-QPLOT™ column.

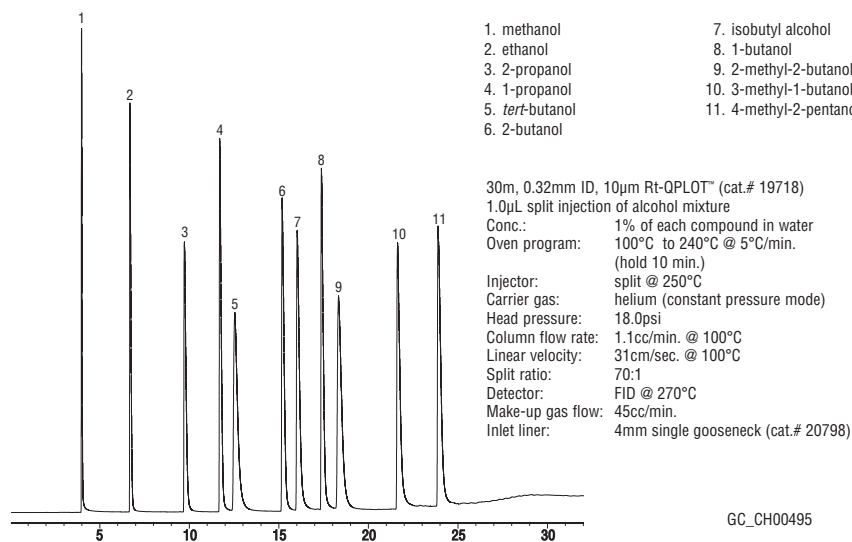
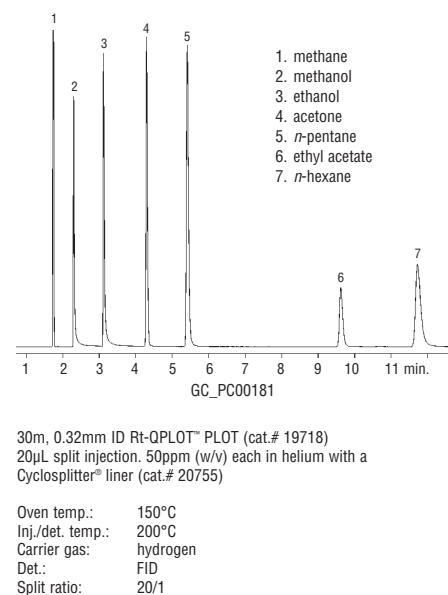


Figure 2

Fast, baseline resolution of polar and nonpolar solvents on an Rt-QPLOT™ column.



Rt-QPLOT™ PLOT Columns (fused silica)

(divinylbenzene)

ID	df (µm)	temp. limits	15-Meter	30-Meter
0.32mm	10	to 310°C	19717	19718
0.53mm	20	to 310°C	19715	19716

For performance and ordering information for Rt-SPLOT™ and Rt-UPLOT™ columns, refer to our catalog or website.