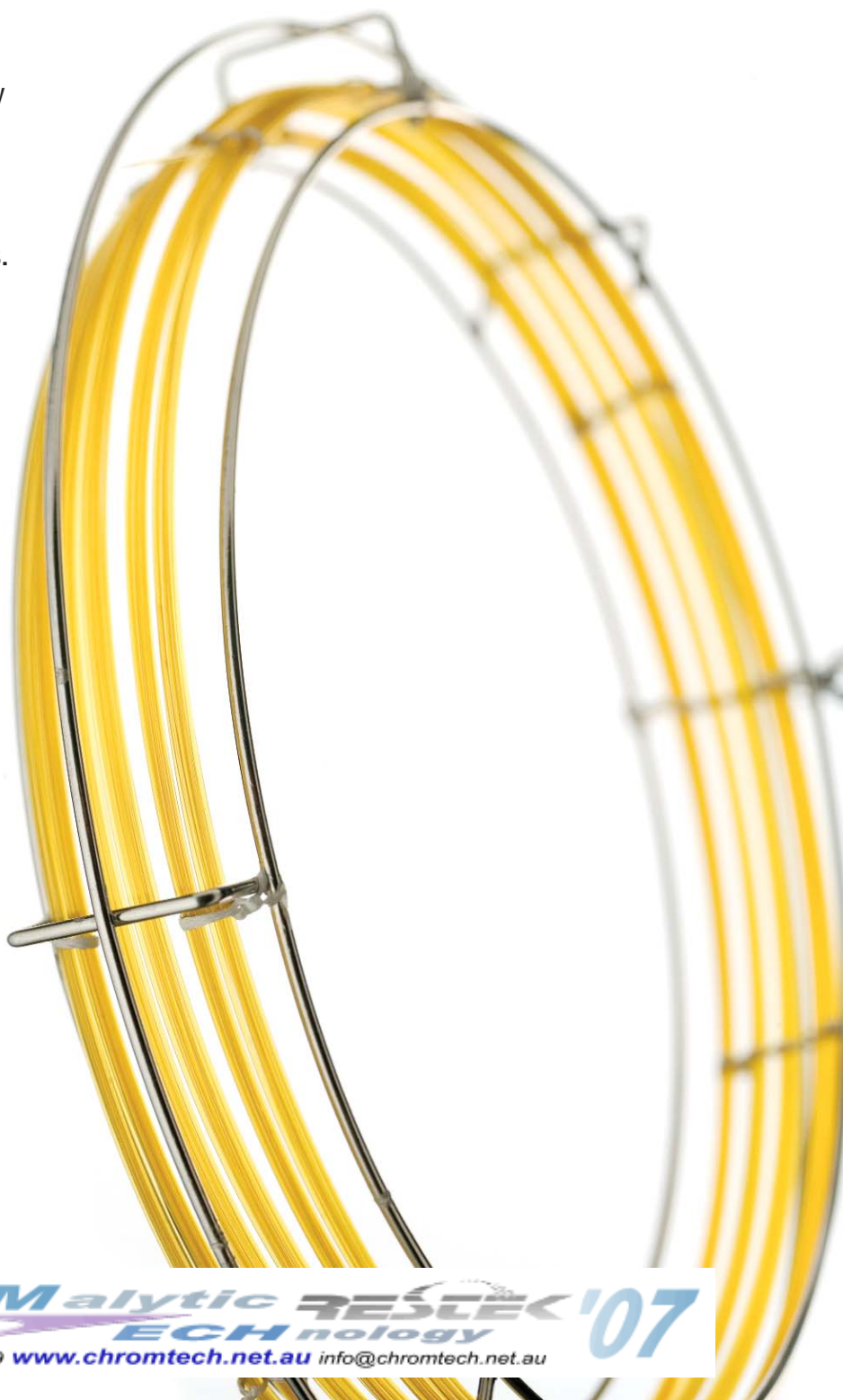


# Restek PLOT Columns

- Inert bonded phases - reduced activity and particle generation.
- Capillary column performance for traditional packed column applications.
- Guaranteed reproducibility!



**HR**Malytic **RESTEK** '07  
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**Chromatography Products**

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## Rt-Alumina™ PLOT

Rt-Alumina™ PLOT columns are made with deactivated NaSO<sub>4</sub>, which is extremely selective for light hydrocarbons such as those typically found in purity analyses of ethylene, propylene, and C4 to C6 gases. Figure 1 shows a temperature programmed analysis of unsaturated and less volatile saturated compounds.

### Rt-Alumina™ Columns (fused silica PLOT) (NaSO<sub>4</sub> Deactivation)

ID	df(μm)	temp. limits	30-Meter	50-Meter	60-Meter
0.32mm	3	to 200°C	19702	—	19703
0.53mm	6	to 200°C	19700	19701	—

## Rt-Msieve™ 5A and Rt-Msieve™ 13X PLOT

Permanent gases can be separated by the Rt-Msieve™ PLOT columns. Rt-Msieve™ 5A PLOT columns are ideal for the efficient separation of permanent gases, including critical pairs like Ar/O<sub>2</sub>. Rt-Msieve™ 13X columns are best for faster, sensitive permanent gas analysis. Figure 2 exhibits the resolving power of Rt-Msieve 5A Column for argon and oxygen at room temperature.

### Rt-Msieve™ 5A Columns (fused silica PLOT)

ID	df(μm)	temp. limits	15-Meter	30-Meter
0.32mm	30	to 300°C	19720	19722
0.53mm	50	to 300°C	19721	19723

### Rt-Msieve™ 13X Columns (fused silica PLOT)

ID	df(μm)	temp. limits	15-Meter	30-Meter
0.53mm	20	up to 300°C	19708	19706

## Rt-QPLOT™, Rt-SPLOT™ and Rt-UPLOT™

The porous polymer columns (Rt-QPLOT™, Rt-SPLOT™, and Rt-UPLOT™), made from divinylbenzene derivatives, are not moisture sensitive, are highly selective for light hydrocarbons, and are excellent for analyses involving polar components such as those found in solvent analysis.

### Rt-QPLOT™ Columns (fused silica PLOT)

divinylbenzene

ID	df(μm)	temp. limits	15-Meter	30-Meter
0.32mm	10	to 250°C	19717	19718
0.53mm	20	to 250°C	19715	19716

### Rt-SPLOT™ Columns (fused silica PLOT)

4-vinylpyridine

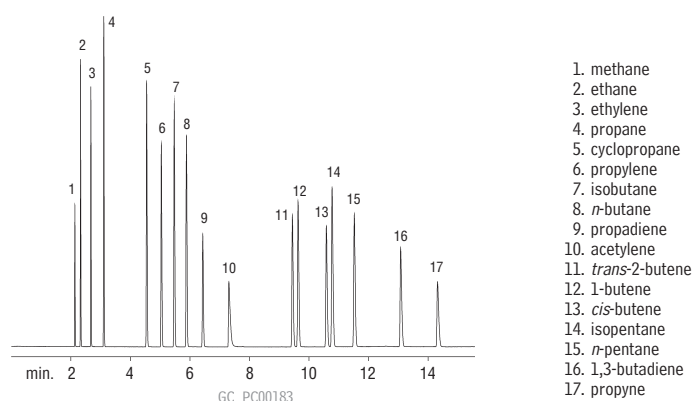
ID	df(μm)	temp. limits	15-Meter	30-Meter
0.32mm	10	to 250°C	19711	19710
0.53mm	20	to 250°C	19713	19712

### Rt-UPLOT™ Columns (fused silica PLOT)

ethylene glycol/dimethylacrylate

ID	df(μm)	temp. limits	15-Meter	30-Meter
0.32mm	10	to 190°C	19725	19724
0.53mm	20	to 190°C	19727	19726

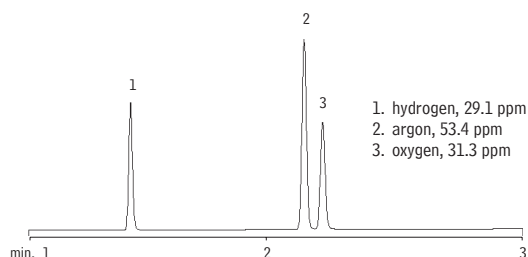
Figure 1—Refinery Gas Rt-Alumina™ PLOT (gas-tight syringe injection)



50m, 0.53mm ID Rt-Alumina™ PLOT (cat. # 19701)  
 100μL hydrocarbon mix split injection, 1000ppm (gas-tight syringe)  
 Oven temp.: 40°C to 120°C @ 5°C/min. (hold 5 min.)  
 Inj. & det. temp.: 200°C  
 Carrier gas: helium  
 Linear velocity: 37.5cm/sec. set @ 80°C (5.0mL/min.)  
 Split flow: 60mL/min.  
 FID sensitivity: 1.28 x 10<sup>10</sup> AFS

1. methane
2. ethane
3. ethylene
4. propane
5. cyclopropane
6. propylene
7. isobutane
8. n-butane
9. propadiene
10. acetylene
11. trans-2-butene
12. 1-butene
13. cis-butene
14. isopentane
15. n-pentane
16. 1,3-butadiene
17. propyne

Figure 2—Rt-Msieve™ 5A PLOT column resolves permanent gases at ambient temperatures or above.



30m, 0.53mm ID Rt-Msieve™ 5A PLOT (cat. # 19723); Sample: 0.5mL sample loop injection; Column temp.: 27°C; Carrier gas: helium; Linear velocity: 34 cm/sec.; Detector: Valco HID.

Chromatogram courtesy of Larry McElmurry, Mobile Analytical Labs.

## Quick Reference Chart

PLOT Column	Application
Rt-Alumina™	C1–C5 hydrocarbons. Example: purity analysis of ethylene, propylene, butenes
Rt-Msieve™ 5A	Argon/oxygen separation; gas purity analysis. Example: gas purity in the semiconductor industry
Rt-Msieve™ 13X	hydrogen, oxygen, nitrogen, methane, and carbon monoxide. Examples: natural gas and refinery gas purity analysis
Rt-QPLOT™	Gases and volatile organic compounds. Examples: polar solvents, alcohols, nonpolar hydrocarbons
Rt-SPLOT™	Light gases in ethylene and propylene, ketones, esters. Example: intermediate polarity hydrocarbons
Rt-UPLOT™	Polar volatiles, nitriles, nitro compounds, alcohols, aldehydes, ethane/ethylene. Example: polar hydrocarbons



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