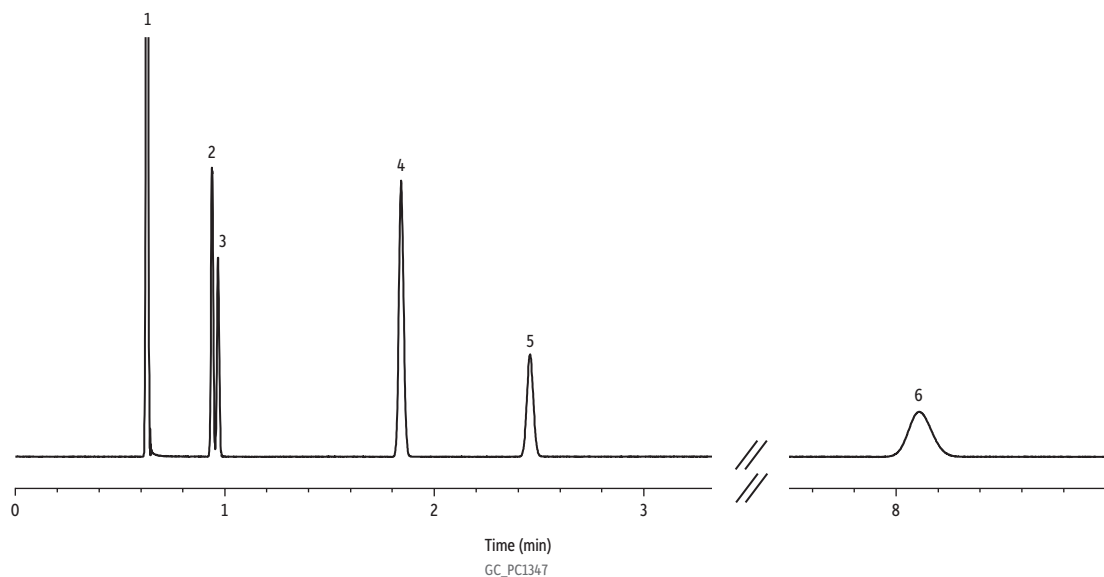


Permanent Gases on Rt-Msieve 5A (15 m x 0.53 mm x 50 µm)



Peaks	Retention Time (min)	Concentration (Mol%)
1. Helium	0.63	Balance
2. Argon	0.94	3
3. Oxygen	0.97	2
4. Nitrogen	1.84	5
5. Methane	2.46	4
6. Carbon monoxide	8.11	5

Column Rt-Msieve 5A, 15 m, 0.53 mm ID, 50 µm (cat.# 19721)
Sample Permanent gases (custom mix)
Injection
 Inj. Vol.: 30 µL split (split ratio 10:1)
 Liner: Topaz 2.0 mm ID straight inlet liner (cat.# 23313)
 Inj. Temp.: 150 °C
Oven
 Oven Temp.: 30 °C (hold 10 min)
Carrier Gas H₂, constant pressure (1.7 psi, 11.7 kPa)
Detector TCD @ 200 °C
Instrument Agilent 7890B GC
Notes Resolution (Ar/O₂) = 1.4
 Asymmetry (CO) = 1.1

Note that the sample was introduced onto the column using syringe injection and a high split ratio, which results in a very narrow sample band. Any dead volume in the system (e.g., from using a sampling valve, large sampling loops, or even from using splitless injection) will result in peak broadening, which might decrease resolution between the peaks or even result in peak coelution.