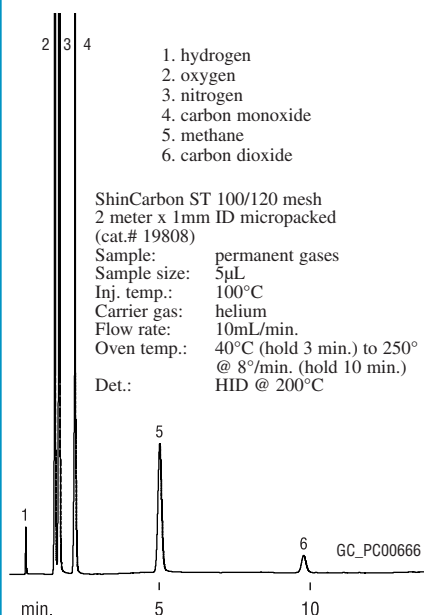


ShinCarbon ST Micropacked GC Columns

Above-Ambient Analyses of Permanent Gases and Light Hydrocarbons

Figure 1

Separate permanent gases in 10 minutes,
without cryogenic cooling.



- Separate permanent gases, including CO/CO₂, in 10 minutes, without cryogenic cooling.
- Rapid separations of permanent gas / light hydrocarbon mixtures.
- Excellent compatibility with most GC detectors—minimal bleed, minimal baseline rise.
- Pre-conditioned, less than 30 minutes to stabilize.

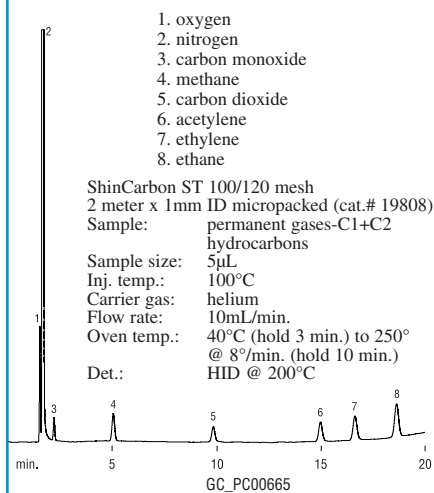
Analyzing the permanent gases oxygen, nitrogen, methane, carbon monoxide, and carbon dioxide has been virtually impossible for a single gas chromatography (GC) or gas-solid chromatography (GSC) column, without sub-ambient temperatures.

Now, Restek's new ShinCarbon ST material, a high surface area carbon molecular sieve (~1500 m²/g), is the ideal medium for separating gases and highly volatile compounds by GSC. A 2-meter by 1mm ID micropacked column containing ShinCarbon ST separates the permanent gases in 10 minutes, without cryogenic cooling (Figure 1).

In addition to providing a breakthrough in analyses of permanent gases, ShinCarbon ST columns can separate light hydrocarbon / permanent gas mixtures. Figure 2 shows an analysis of permanent gases plus acetylene, ethylene, and ethane, completed in less than 20 minutes. Natural gas components (70% methane) also are cleanly separated (Figure 3). Other potential applications for ShinCarbon ST include analyses of sulfur dioxide (Figure 4) and Freon® fluorocarbons (Figure 5).*

Figure 2

Rapidly analyze light hydrocarbon/
permanent gas mixtures.



*For analysis of other low molecular weight sulfur compounds, we recommend Rt-XLSulfur™ micropacked and packed columns or Rtx®-1 capillary columns.

Figure 3

Separate components in natural gas.

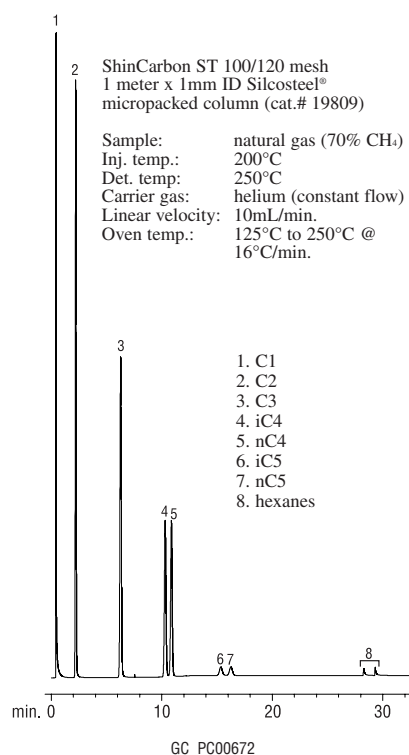
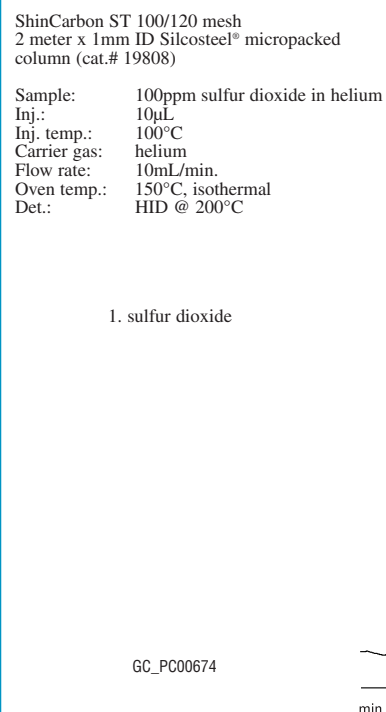


Figure 4

Sharp peak for ppm level sulfur dioxide.



FAST FACTS

At-a-Glance Product Information from Restek

online ordering available!
for U.S. customers only
www.restekcorp.com

ShinCarbon ST is a highly stable material. Its 330°C upper temperature limit minimizes bleed and baseline rise during temperature programming, making the material compatible with most detection systems used for gas analysis, including TCD or HID. All ShinCarbon ST columns are fully conditioned in an oxygen/moisture free environment to prevent contamination. This minimizes stabilization time (less than 30 minutes) when installing a new column which, in turn, minimizes downtime.

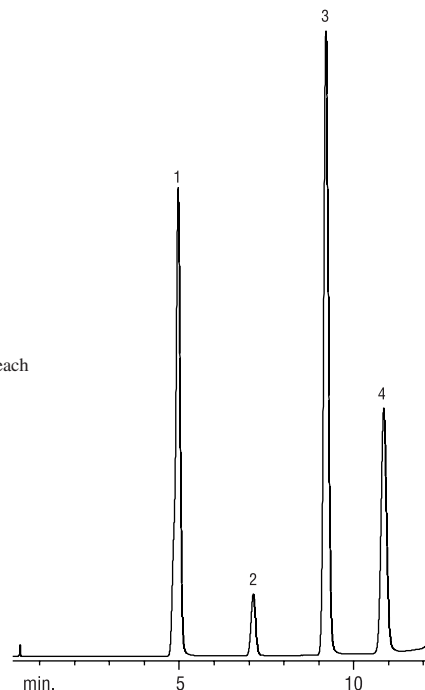
The unique properties of ShinCarbon ST make it an ideal packing material for analyses of gases and highly volatile compounds, including permanent gases, low molecular weight hydrocarbons, and Freon® gases. The rapid, above-ambient analyses these columns provide will be a great convenience. Excellent thermal stability of the high surface area carbon, combined with careful conditioning during column manufacture, ensures low-bleed operation and rapid stabilization when installing a new column. Custom-made ShinCarbon ST columns are available on request.

Figure 5

Fluorocarbon analysis completed in 11 minutes on ShinCarbon ST column.

Peak	Ret. Time (min.)
1. Freon® 134a/22	4.95
2. Freon® 12	7.11
3. Freon® 133a	9.19
4. Freon® 114	10.85

ShinCarbon ST 100/120 mesh
1 meter x 1mm ID Silcosteel® micropacked column
(cat.# 19809)
Sample: fluorocarbon blend, 5µL ~1-3% each
Inj. temp.: 200°C
Det. temp.: 250°C
Carrier gas: helium
Linear velocity: 10mL/min.
Oven temp.: 125°C to 320°C @ 16°C/min.



GC_PC00673



Refer to our catalog or website for Scott gas standards for permanent gases and light hydrocarbons

Ordering Information | ShinCarbon ST 100/120 Micropacked Columns

OD	ID	1-Meter	2-Meter
1/16"	1.0mm	19809	19808
0.95mm	0.75mm	19810	—

Ordering Information | ShinCarbon ST 80/100 Packed Columns

OD	ID	2-Meter
1/8" SilcoSmooth™	2.0mm	80486-xxx

Ordering Information | Installation Kits

	for 0.75mm ID col.	for 1mm ID col.
For valve applications	21062	21065
For split applications	21063	—
For all Agilent GCs	21064	—
For direct injections	—	21066

Restek trademarks: Rtx, Rt-SXL Sulfur, SilcoSmooth, Silcosteel, and the Restek logo. Other trademarks: Freon (E.I. du Pont de Nemours & Co., Inc.).

Column Configurations

Add the appropriate suffix to the catalog number when ordering packed columns. Contact us for custom configurations.

General Configuration: Suffix -800	Agilent 5880, 5890, 5987, 6890: Suffix -810	Varian 3700, Vista Series, FID: Suffix -820	PE 900-3920 Sigma 1,2,3: Suffix -830	PE Auto System 8300, 8400, 8700 (Not On-Column): Suffix -840



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