

## Permanent Gases & Hydrocarbon Analysis

### it's a fact

ShinCarbon ST is an ideal packing material for permanent gases, low molecular weight hydrocarbons, sulfur dioxide, and Freon® gases.

### also available

For adapter kits for installing packed/micropacked columns, see [page 119](#).

### a plus 1 story

"Being one of the first labs to utilize the ShinCarbon column in a real working environment, I was pleased to find that I was able to do all my permanent gas analysis on one column instead of the customary two. The peaks were sharper than I had experienced in the past and run time was significantly reduced. We are extremely pleased with the performance of the ShinCarbon column and will continue to find even more applications for it."

**Bruce Nasser,**  
Quality Control Chemist,  
Oxygen Service Spec Lab

### ShinCarbon ST Packed/Micropacked Columns

- Separate permanent gases, including CO/CO<sub>2</sub>, without cryogenic cooling.
- Rapid separations of permanent gas/light hydrocarbon mixtures.
- Excellent compatibility with most GC detectors—minimal bleed, minimal baseline rise.
- Preconditioned, less than 30 minutes to stabilize.

Analyze oxygen, nitrogen, methane, carbon monoxide, and carbon dioxide with one column and at room temperature. ShinCarbon ST material, a high surface area carbon molecular sieve (~1500 m<sup>2</sup>/g), is the ideal medium for separating gases and highly volatile compounds by GSC. 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 manufacturing, ensures low-bleed operation and rapid stabilization when installing a new column. Custom-made ShinCarbon ST columns are available on request.

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.

### ShinCarbon ST 80/100 Packed Columns (SilcoSmooth™ Stainless Steel)

OD	ID	2-Meter*	
1/8"	Silcosmooth™	2.0mm	80486-

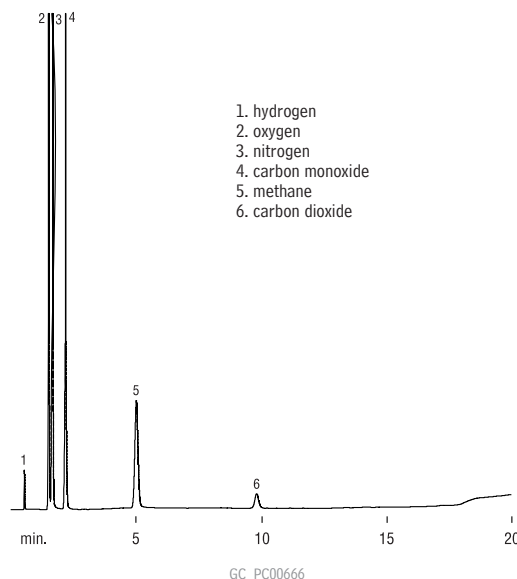
### ShinCarbon ST 100/120 Micropacked Columns\*\*

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

\*Please add column instrument configuration suffix number to cat.# when ordering. See chart on the next page.

\*\*Order installation kit separately. See page 119.

### Separate permanent gases in 10 minutes, without cryogenics.



1. hydrogen
2. oxygen
3. nitrogen
4. carbon monoxide
5. methane
6. carbon dioxide

ShinCarbon ST 100/120 mesh  
2 meter x 1mm ID micropacked (cat.# 19808)  
Sample: 5µL permanent gases mix, approx.  
5 mol. percent each  
Inj. temp.: 100°C  
Carrier gas: helium  
Flow rate: 10mL/min.  
Oven temp.: 40°C (hold 3 min.) to 250°C  
@ 8°/min. (hold 10 min.)  
Det. HID @ 200°C

### please note

For additional example applications for ShinCarbon ST columns, see [pages 682, 684, and 686](#) in the Applications section.