introducing

GC Racer (Patent Pending)

fast oven programming

from RESTEK & Zip Scientific

GC Racer

fast oven programming

Fast temperature programs are commonly used in gas chromatographic (GC) applications to speed up elution of high boiling point compounds and late eluters. The most common GC, the Agilent 5890, has a maximum temperature program rate of 70°C/min. The factory heating elements in the 5890 only allow for this maximum temperature program rate to be maintained up to a temperature of 100°C. For analysts trying to push temperature ramps as fast as possible, this inhibited program rate leads to longer analysis time and broader peaks. Now, using the GC Racer auxiliary heating unit, temperature program rates of 70°C/min. can be maintained up to 350°C (Figure 1).

Restek and Zip Scientific have teamed up to bring you the GC Racer temperature programmer, which consists of a resistive heating element placed on the floor of the GC oven. The heating element is connected to a controller that is plugged into the main PC board of the GC. When the GC Racer programmer detects that the factory heating elements are not keeping up with the programmed heating rate, the heater is brought into the circuit to augment the heat being supplied to the oven. The GC Racer system will maintain temperature program rates of 70°C/min. up to 350°C and 60°C/min. to temperatures as high as 450°C.

The simplicity of its components and installation makes the GC Racer system a "must have" add-on accessory for every 5890 GC.

The auxiliary heater design is similar to that of the original GC heater. The heater plugs into the GC Racer controller, which plugs into the main PC board on the GC. The only other connection needed is plugging the GC Racer controller into a 115V electrical service. At no time during the installation of the GC Racer system does the column need to be removed from the oven, or disconnected from the detector or injection port.

As part of cost reduction efforts, many laboratories try to reduce individual sample analysis times in the interest of increasing overall throughput. High-temperature simulated distillation analyses can take as long as an hour, especially when samples contain hydrocarbons up to C110. An effective technique to reduce analysis time is to use rapid temperature programming. By attaching the GC Racer to your Agilent 5890 GC, the analysis of a Polywax® 1000 reference material can be reduced from over 50 minutes to less than 15 minutes by temperature programming at 60°C/min. (Figure 2)! Notice you also can analyze Aroclor® standards in less than 6 minutes (Figure 3).

The GC Racer system is a new tool in the quest for high-speed GC. The speed of analysis that now can be achieved and the ease of installation will lead to direct savings of time and money by decreasing run time and increasing sample throughput. ■

Operate your Agilent 5890 as fast as a 6890!

Feature	Benefit
Increases Agilent 5890 heating rates to 70°C/min. up to 350°C.	*Faster analysis provides increased sample throughput.*
"Plug and Play" installation takes just minutes and requires no operator training.	*Easy to operate and install.*
Reliable performance.	*Reproducible results.*

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GC Racer

GC Racer

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Figure 1.

The GC Racer allows fast temperature program rates of 70°C/min. to be maintained up to 350°C!

GC: Agilent; 5890 **Service:** 120V/15 amp
Start Temp: 20°C; set oven to 400°C and monitor oven temp.

the
GC Racer
advantage

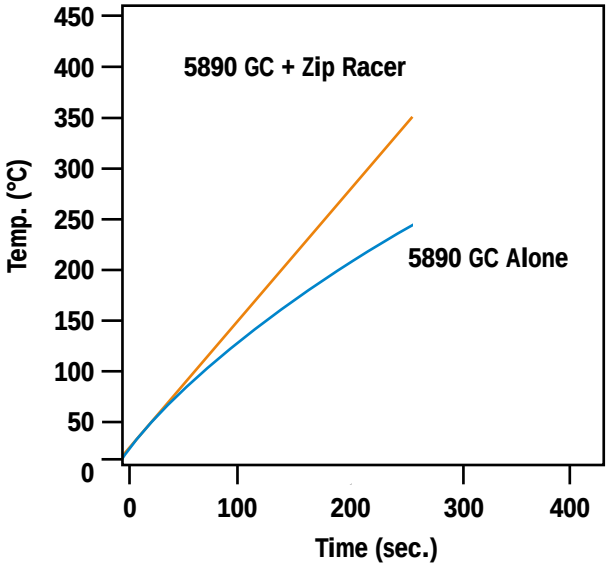
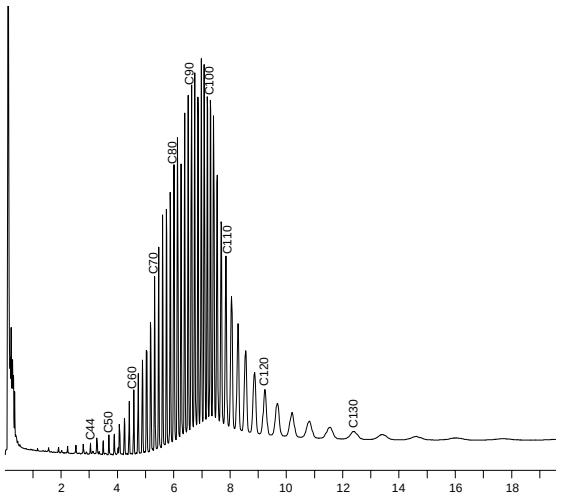


Figure 2.

Achieve the separation of C40–C130 hydrocarbons in 15 minutes by using a GC Racer and a 60°C/min. temperature program rate.

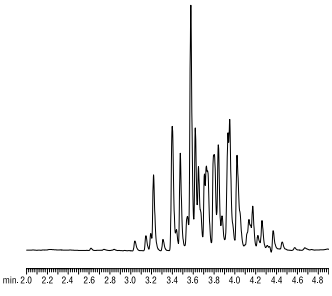
Column:	5m, 0.53mm ID, 0.10µm MXT®-1HT Sim Dist (cat.# 70100)
Sample:	Polywax® 1000 (cat.# 36227) in carbon disulfide
Inj.:	0.2µL, on-column (track oven)
GC:	Agilent 5890 GC w/ GC Racer system
Carrier gas:	hydrogen, constant pressure @ 1.0 psi
Detector:	FID @ 430°C
Oven Temp.:	40°C to 430° C @ 60°C/min.



GC_PC00543

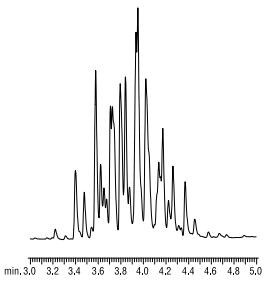
Figure 3. Analyze Aroclor® standards in less than 6 minutes using a GC Racer system.

PCBs
Aroclor® 1242
Rtx®-5 using GC Racer



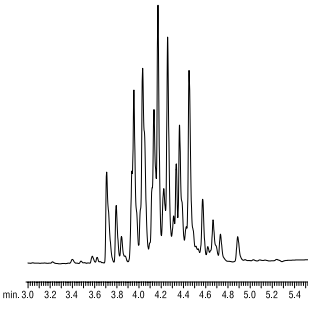
GC_EV00581

PCBs
Aroclor® 1248
Rtx®-5 using GC Racer



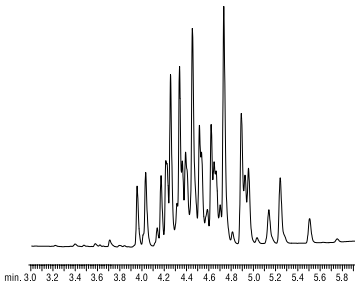
GC_EV00582

PCBs
Aroclor® 1254
Rtx®-5 using GC Racer



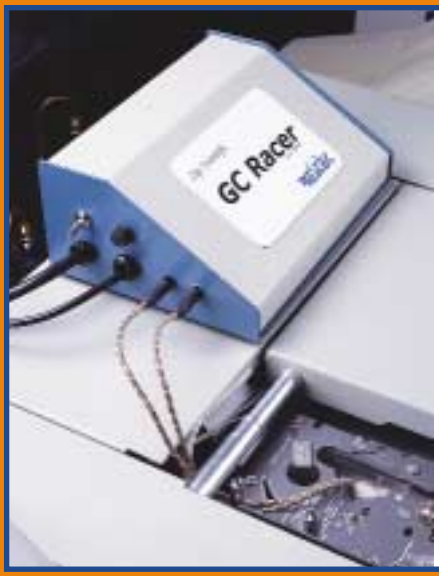
GC_EV00583

PCBs
Aroclor® 1260
Rtx®-5 using GC Racer



GC_EV00584

Column: Rtx®-5 15m, 0.32mm ID, 0.50µm (cat.# 10236) **Inj.:** 1µL splitless (hold 0.5 min.), Siltek™ Drilled Uniliner® Liner (cat.# 21054-214.1) **Conc.:** 400 ppb
Inj. temp.: 250°C **Carrier gas:** hydrogen **Linear velocity:** head pressure at 5 psi **Oven temp.:** 110°C (hold 1 min.) to 300°C, @ 60°C/min. (hold 5 min.) **Det. temp.:** 310°C



Fast GC Temperature Programming—GC Racer

- **Increase sample throughput.**
- **Makes reproducible, fast GC possible.**
- **Easy to operate and install—truly a "Plug and Play" accessory.**

The Zip Scientific GC Racer provides affordable, fast temperature programming for GC applications. Routine testing labs, process control stations, GC/MS users, and anyone recognizing that "time is money" can profit from higher sample throughput and faster turnaround times with this exciting new approach for fast GC.

Best of all, the GC Racer is so simple that it easily installs in minutes and requires no operator training. The GC Racer provides heating rates between 0°C and 70°C/min. up to 350°C for the best combination of fast heating rates, reliable performance, versatility, and robustness for everyday use. The GC Racer works with any injector/detector combination on Agilent 5890 GCs.

Product Listing

✔ **GC Racer GC Temperature Programmer**

Description	qty.	cat.#
For Agilent 5890 Series II (only) GC	ea.	23024
For Agilent 5890A (only) GC	ea.	23025

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Restek is developing columns that will further speed up applications including simulated distillation, Aroclors®, PCBs, PAHs, semivolatiles, pesticides, and more.

Please see Restek's Chromatography Products Catalog for other GC add-on items (Lit. Cat.#59662).

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