It works as hard as you do.

Agilent 6890N Network GC

- *Rugged and reliable for unsurpassed uptime*
- *Advanced EPC ensures precision and accuracy of results*
- *Retention Time Locking for consistent results*
- *Accomplish more with fast GC capabilites*

Agilent Technologies

6890N Network GC: It works as hard as you do.

We have one thing in mind:
hard work.

Laboratories worldwide are looking for a GC solution that delivers reliability, performance, and reproducible results. And nothing produces these benefits like the Agilent 6890N Network GC. By integrating leading-edge technologies with an emphasis on quality manufacturing processes, the 6890N will bring a work ethic to your laboratory that's matched only by your own.

The tools you need to get things done

- Agilent 7683 automatic liquid sampler*
- Agilent G1888 headspace sampler
- Agilent 7694E headspace sampler
- Purge and trap
- Gas and liquid sampling valves
- Deans Switch for 2D GC
- Ambient air sampler and preconcentrator**
- Thermal desorber**
- Pyrolyzer**

Flexibility of columns to suit your needs***

- Nonpolar (HP-1, DB-1MS, DB-5MS, DB-XLB, HP-1MS, HP-5, HP-5MS)
- Midpolarity (HP-35, HP-35MS, DB-35, DB-35MS, DB-17, DB-17MS, HP-50+)
- High-polarity PEG (HP-Wax, HP INNOWax, DB-Wax, HP-FFAP)
- PLOT (MoleSieve, PLOT Q, GS-GasPro, HP-PLOT Al_2O_3, HP-PLOT MoleSieve)
- Application-specific columns (DB-VRX, DB-Dioxin, DB-ALCI and ALC2)

Wide selection of inlets

- Split/splitless (S/SL) capillary
- Packed purged injection port (PPIP)
- Cool on-column (COC)
- Cool on-column with solvent vapor exit (COC-SVE)
- Programmable temperature vaporizing (PTV)
- Volatiles interface (VI)
- Cooled injection system (CIS)**
- Temperature-programmable pre-column**

Acccomplish more with networking abilities

- Lets you share business and scientific data easily within a laboratory and across sites for fast and informed decision making.
- Incorporates local area network (LAN) technology as a standard feature, which makes it easy to link communication and control of multiple analytical instruments. With networking, you can work **smarter, faster, and more economically.**

* The 6890N network gas chromatograph is ready for attaching the Agilent 7683 series automatic liquid sampler.
** Available through Agilent Channel Partners.
*** For a complete list of Agilent columns and supplies, visit our Shopping Village on the World Wide Web at http://www.agilent.com/chem

See how the Agilent 6890N Network GC can go to work for you.

Easy operation and data handling

- Agilent ChemStation Plus family (including Agilent ChemStore C/S and ChemAccess C/S) for data organization, storage and remote access
- Agilent Cerity Networked Data System (NDS) for Chemical QA/QC

A variety of detectors

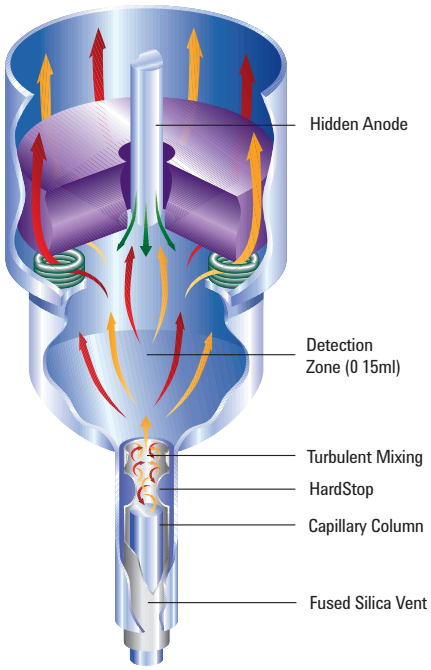
- Mass selective (Agilent 5973N Series MSD)
- Flame ionization (FID)
- Thermal conductivity (TCD)
- Micro-electron capture (micro-ECD)
- Flame photometric, single- or dual-wavelength (FPD)
- Nitrogen-phosphorus (NPD)
- Atomic emission (AED)*
- Pulsed flame photometric (PFPD)*
- Photoionization (PID)*
- Electrolytic conductivity (ELCD)*
- Discharge ionization (DID)*
- Sulfur chemiluminescence (SCD)*
- Nitrogen chemiluminescence (NCD)*

* Available through Agilent Channel Partners.

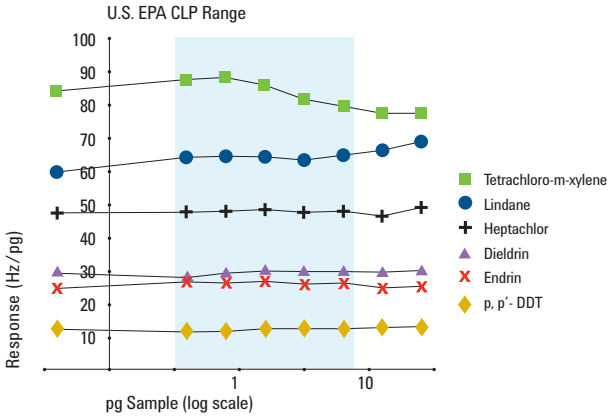
6890N Network GC: It works as hard as you do.

An instrument that understands
an honest day's work.

From operator interaction and sample input to separation, data acquisition, and analysis, the Agilent 6890N network GC system is designed to be one of the most productive workers in your lab.



Micro-Electron Capture Detector

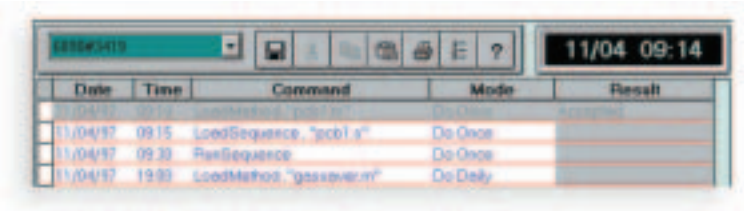


More Productive than Any Other ECD

The Agilent 6890N micro-electron capture detector gives you **greater throughput, less rework, reduced susceptibility to contamination, and expanded detection limits** compared with any other electron capture detector. This detector offers the best sensitivity and linearity in the world. You do not have to concentrate extremely dilute samples and you do not have to dilute concentrated samples to get within the sample calibration range. Furthermore, this rugged, completely redesigned detector, which is optimized for capillary chromatography, lets you perform fast GC.

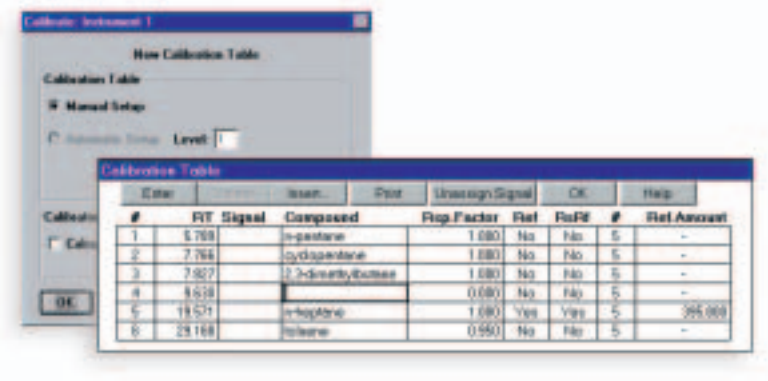
Increased Laboratory Efficiency

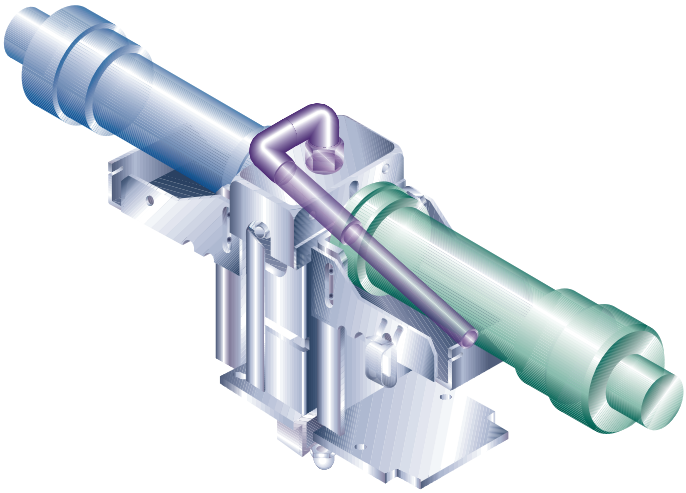
Clock-time programming allows you to set up runs for unattended operation whenever you want. The system can be **ready to work when you get to your laboratory.** Pre-run and post-run commands automatically prepare the system for the next sample.



Decreased Calibration Time

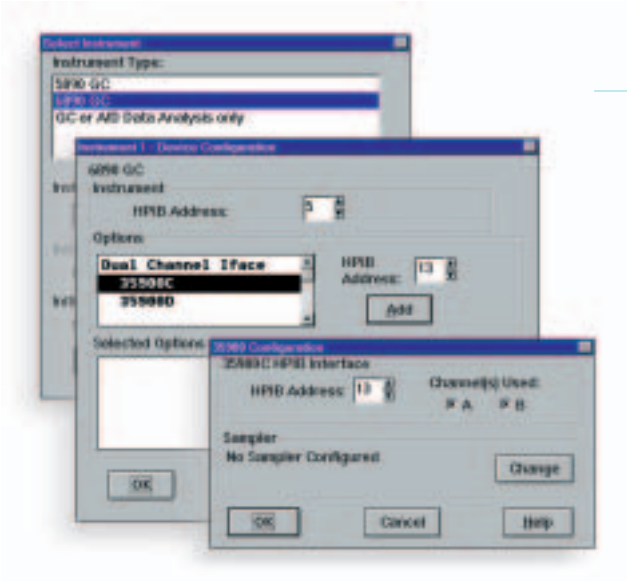
You can manually enter existing calibration data and make a run with just one standard peak. The system can normalize the calibration table for you, allowing you to **cut calibration time and avoid re-running your calibration standards.**





Simultaneous Detection of Sulfur and Phosphorus

A dual-wavelength flame photometric detector can detect, sensitively and selectively, both sulfur and phosphorus—in just one run. You **save the time it would take for separate runs.**



Efficient Data Handling

The Agilent ChemStation for the 6890N network GC system lets you **display, calibrate, and report data from up to four signals—without having to synchronize separate runs and merge results.** This is particularly efficient when you need to set up and report complex analyses.

Agilent's Cerity Networked Data System for Chemical QA/QC gives you exactly what you need for your particular laboratory environment. Use-specific **applications model your everyday tasks,** making every step more efficient. Cerity NDS also **connects you with your company's intranet and the Internet** for pulling in what you need to work efficiently or sending out results to your customers, fast.

Automatic Liquid Sampler

100-vial sample tray

8-sample turret for use without tray

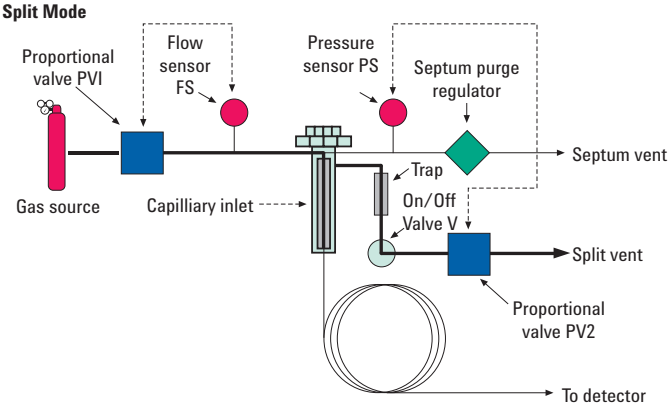
11-vial transfer turret for use with tray

High Sample Throughput

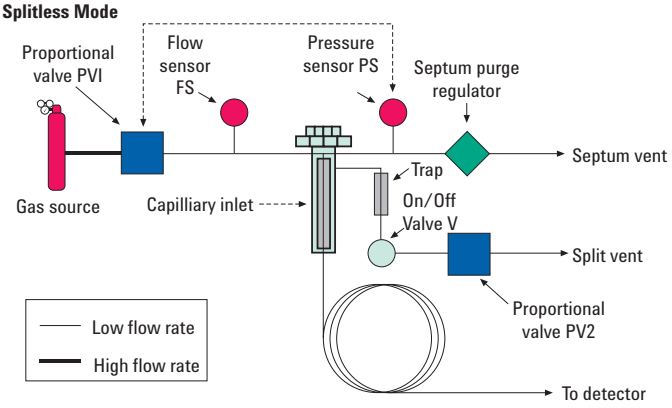
The 6890N network GC system is already set up for the Agilent 7683 automatic liquid sampler, enabling fast and easy installation.

Single or dual injectors, equipped with either an 8-sample turret or a 100-vial sample tray, allow unattended operation. Using the 11-vial transfer turret with the tray and the solvent saving mode, you have enough solvent to run unattended eight times longer than before.

Split Mode



Splitless Mode



Minimal Rework

The Agilent 6890N network GC system is the only GC system that automatically selects the optimum pressure-control mode for split and splitless analyses. Forward-pressure control is best for splitless injections. Along with a large inlet liner volume and pressure-pulse operation, this mode reduces discrimination, sample degradation, and sample loss caused by liner overload while maximizing sensitivity.

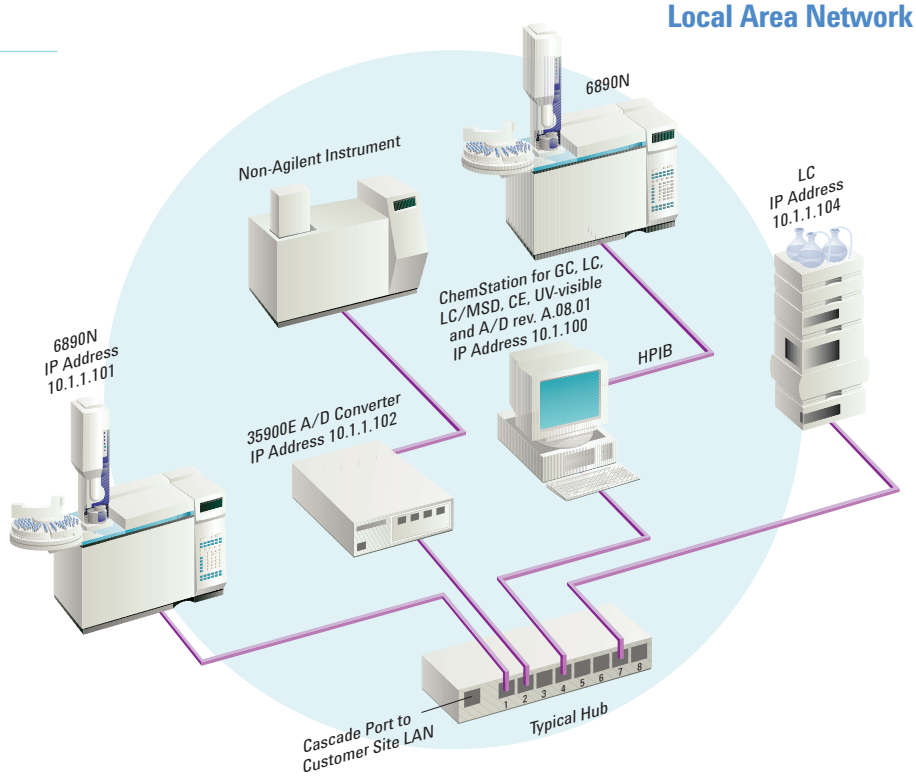
For split injections, the system automatically selects back-pressure control for linear split ratios over the entire usable split-ratio range and over wide column flow and pressure ranges. This reduces sample preparation and increases reproducibility and accuracy.

Automatic switching between forward-and back-pressure modes yields optimal results in less time and with less effort.

Instrument Control—from Anywhere

The 6890N network GC systems, along with other Agilent analytical instruments, incorporate Ethernet technology as a standard feature, enabling extended laboratory connections. Using either Agilent's ChemStation Plus or Cerity Networked Data System software, you have the advantage of **instrument control and centralized data handling over virtually unlimited distances.** The networked system also uses minimal PC resources and provides easy integration of intranet and Internet solutions.

Local Area Network



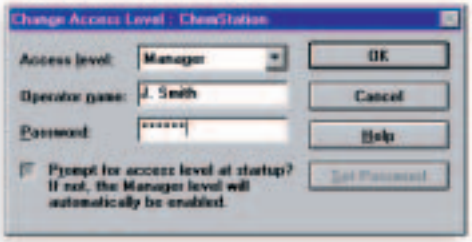
Results that meet regulations—
and your expectations.

The Agilent 6890N works as hard to meet regulatory requirements as it does to meet the needs of your lab. That's why Agilent designed into the GC ChemStation a variety of features to answer the strict regulatory, certification, and quality control requirements of your industry. Agilent's expert staff of engineers will work for you too— our installation qualification and operational qualification/performance verification services can help ensure your lab is in complete compliance.

Good Laboratory Practice

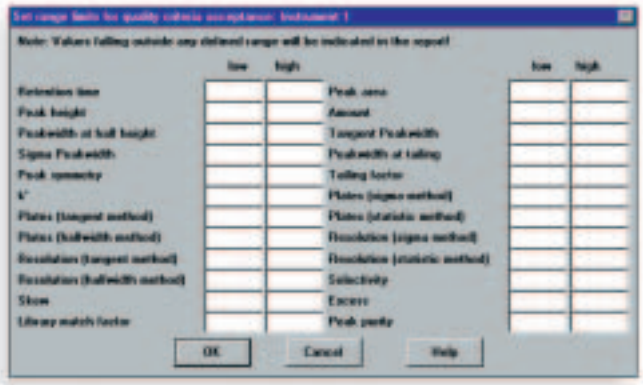
A Record of *All* Events

Both the Agilent Cerity Networked Data System and Agilent ChemStation Plus family **ease the burden of meeting regulatory and quality requirements.** Both software programs, for example, record all system events during an analysis. This includes any anomalies or deviations from method setpoints.



Assured Method Security

Your original method, including all GC parameters and data files, can be stored in a single protected, uneditable format for assured integrity. Furthermore, your **methods and data are protected** by a keyboard lock and multilevel security.



System Performance Control

A system suitability table lets you **easily set range limits on critical parameters** to establish and verify system performance.

6890N Network GC: It works as hard as you do.

Method setup that's fast,
results that stay true.

You want to keep your cost-per-analysis down— but not at the cost of unreliable results. That's why Agilent designed the 6890N to do much of the work for you. It's easy to operate, with minimal time required for training, prep and data handling. You'll save time by entering all GC parameters electronically. Once set, they remain precisely the same for accurate and reproducible results you can count on, every time, with every operator, and with minimal rework.

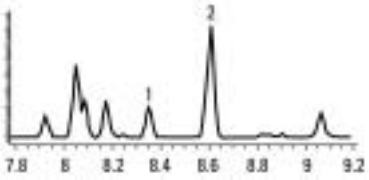
Simplified Control

The 6890N keyboard **simplifies parameter entry and system control.** The keyboard displays four parameters of your choice, giving you instant access to system information— for fast, effective diagnostics and troubleshooting. All parameters can be stored and recalled at the touch of a button.

Fourth-Generation Pneumatics Control

Unsurpassed Reproducibility

Full electronic pneumatics control (EPC) makes it **fast and easy to set all pressures and flows.** Our fourth-generation EPC keeps these setpoints constant from run to run, providing excellent retention time reproducibility.



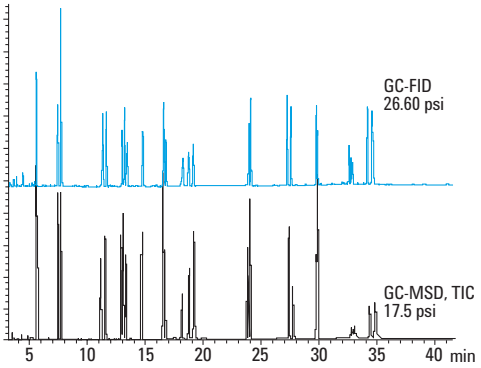
Retention Time (min)		
Run	**Peak 1**	**Peak 2**
1	8.377	8.632
2	8.377	8.632
3	8.377	8.633
4	8.377	8.632
5	8.376	8.632
6	8.374	8.630
7	8.375	8.631
8	8.375	8.631
9	8.374	8.630
10	8.374	8.630
11	8.375	8.631
12	8.376	8.632
13	8.376	8.632
14	8.376	8.632
15	8.376	8.632
Average	**8.376**	**8.632**
Standard Deviation	**0.001**	**0.001**

Retention Time Locking with GC and GC/MSD ChemStation

Retention Time Repeatability on Different Configurations of the Agilent 6890N GC with EPC

Inlet	Detector	Injection Technique	Dichlorvos	Chlorpyrifos Methyl	Mirex
COC	MSD	On-column	5.862	16.607	29.836
PTV	MSD	Splitless	5.897	16.593	29.800
S/SL	FID	Splitless	5.797	16.587	29.856
S/SL	AED	Splitless	5.829	16.600	29.839
S/SL	AED	Splitless	5.837	16.604	29.851
PTV	Micro-ECD	Split	5.798	16.576	29.876
PTV	Micro-ECD	Split	5.860	16.597	29.864
PTV	Micro-ECD	Cold splitless	5.862	16.589	29.867
S/SL	Dual FPD	Splitless	5.814	16.596	Undetected
S/SL	NPD	Splitless	5.814	16.596	Undetected
Statistical Comparison of Results					
High-low			0.100	0.028	0.076
Average			5.837	16.595	29.849
Standard deviation			0.033	0.009	0.024
% Relative standard deviation			0.560	0.054	0.080

MSD Method Locked to FID Method
Mixture of 25 Pesticides



Different Detector, Different Location, Different Operator—Same Results

Retention Time Locking (RTL) software is a powerful productivity tool that lets you reproduce exactly the same results on multiple Agilent GCs with EPC—configuration to configuration, location to location, operator to operator. This revolutionary technology allows retention times to be reproduced between Agilent GC systems within hundredths and even thousandths of a minute. With RTL, you more easily and accurately identify peaks, increase sample throughput, reduce the risk of noncompliance, enhance confidence in analytical results, and lower operating costs.

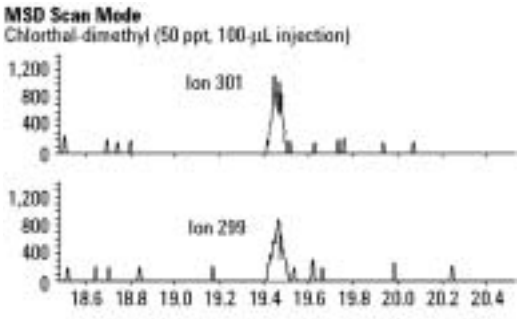
Modularity to Meet Changing Needs

Modular design of system components lets you quickly **change or upgrade GC configurations with ease.**

Take the work out
of manual sample prep.

With enhanced technologies, the 6890N works harder than ever to increase your lab's performance. Both injection and headspace sampling are automated, which means less manual work and even more precise results. You'll enjoy quicker turnaround time, lower cost per analysis, and less waste.

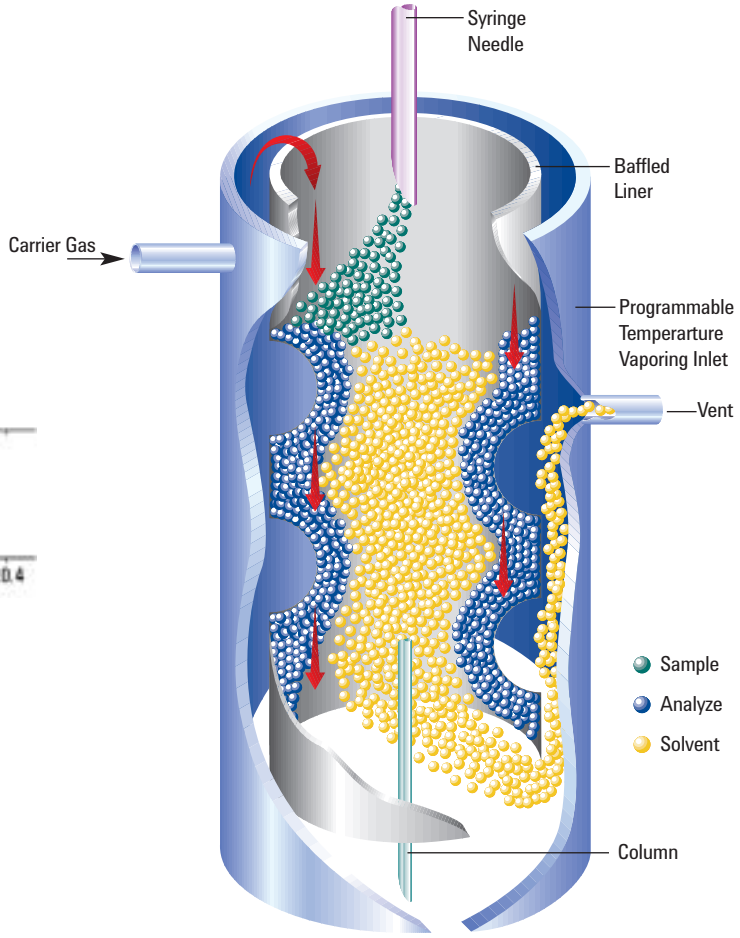
Large-Volume Injection



Ambient Headspace Sampling | Multiphase Sampling | Small-Volume Sampling

Sampling Flexibility

The Agilent automatic liquid sampler lets you mimic manual injection. At the same time, you get the convenience of automated injection. Other benefits include improved precision and accuracy (with the industry's fastest injection speed) and the ability to sample individual layers in a vial for **automated micro-liquid/liquid extraction and ambient headspace analysis.**

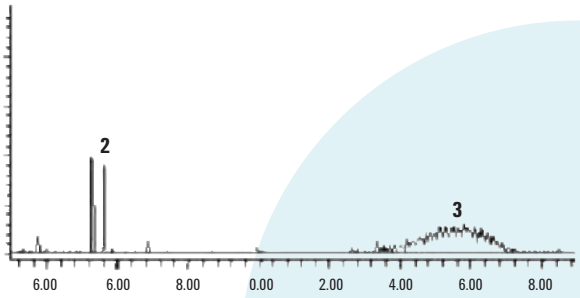


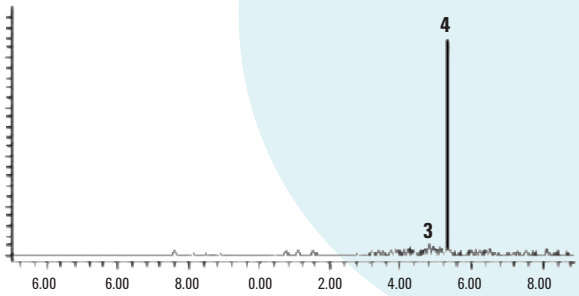
No Sample Concentration

The system's automatic liquid sampler offers **large-volume injection, eliminating sample concentration** steps. Using the programmable temperature vaporizing inlet or cool on-column inlet, you can inject up to 50 µL in a single injection. If you are using a programmable temperature vaporizing inlet, you can inject up to 500 µL, with multiple injections. This gives you highly sensitive quantitation—especially useful for mass selective detection and atomic emission detection.

No Sample Preparation

Headspace sampling can **eliminate sample preparation** by introducing volatile components automatically—from virtually any matrix—directly into the GC. A low-volume, highly inert volatiles interface is optimized for headspace-GC analysis, preventing sample loss or degradation. Agilent headspace instrument control is fully integrated into the Agilent GC ChemStation software.



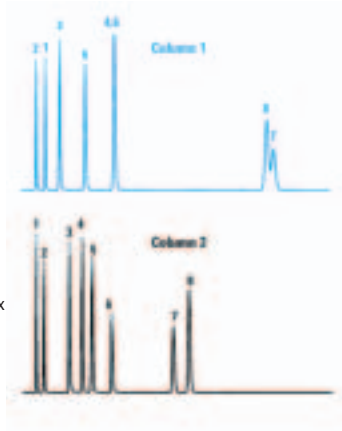


Blood Alcohols by Headspace
30 m x 0.32 mm x 1.8 µm
DB-ALC1

GC Oven: 35° C isothermal
Inlet: Split/splitless at 150 C°
A two-hole ferrule (P/N 5062-3580 was used to connect both columns to the same inlet
Column I: DB-ALC1 (P/N 123-9134) 30m x 0.32 mm x 1.8µm
Column II: DB-ALC2 (P/N 123-9234) 30m x 0.32 mm x 1.2µm

Headspace oven: 60°C
Vial equilibration time: 15 min
Sample: 5 µl of 0.08 g/dL standard mix in 10 ml vial

Peak 1 = Acetaldehyde
Peak 2 = Methanol
Peak 3 = Ethanol
Peak 4 = Acetone
Peak 5 = 2-Propanol
Peak 6 = Acetonitrile
Peak 7 = Ethyl Acetate
Peak 8 = Methyl-Ethyl Ketone



Reduced Derivatization

A cool on-column inlet offers a gentle environment for thermally labile compounds. This **minimizes the need for derivatization and improves the accuracy of sample characterization.**

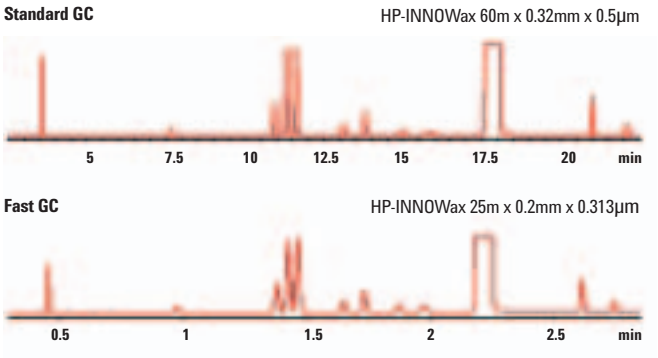
Waste no time,
results come in minutes.

The Agilent 6890N network GC system lets you cut analysis time dramatically— without sacrificing the quality of your results.

Columns for Fast Analysis

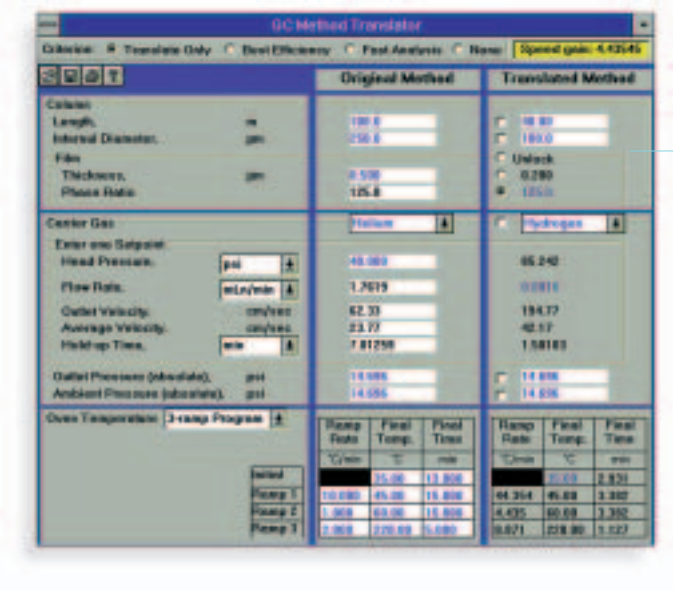
A line of HP 100-µm and 200-µm high-speed capillary columns **complements the fast analysis capabilities of the Agilent 6890N network GC system.** These narrow-bore columns are available in a number of configurations, including constant phase ratio—a configuration useful for scaling down from conventional larger column diameters when you want to shorten GC run times and improve efficiency. HP high-speed capillary columns come in a variety of popular phases and film thicknesses for fast gas chromatography without loss of resolution.

Styrene



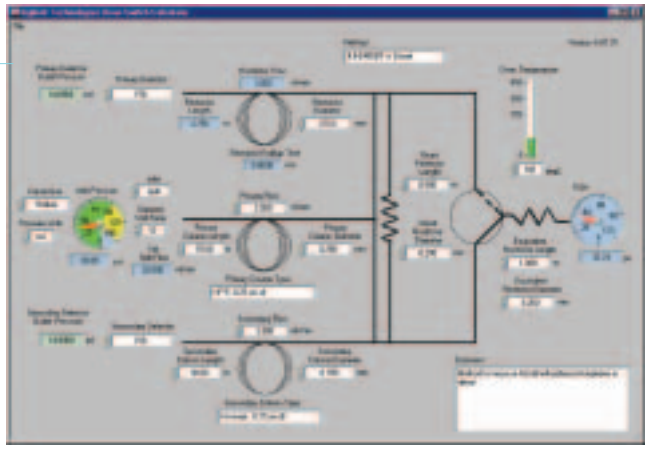
Real GC—Ten Times Faster

The Agilent 6890N network GC system provides everything you need for fast GC. This includes fast automatic injection, split/splitless inlets, 0.1-mm capillary columns, high-speed detectors, fast data handling, and method translation software. **You get *real* chromatography, accurately and consistently, two or five or even ten times faster than standard GC.** And you can switch back to standard GC with ease.



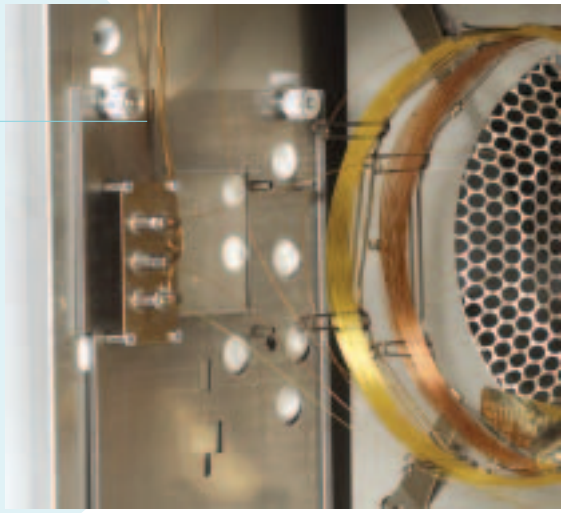
Easy Translation to Fast GC

Free method translation software lets you **transfer current methods to faster methods in minutes.** You can see the impact of parameter changes on analysis speed—before you run a sample. At the same time, the software identifies any potential method or instrument constraints so that you know what will work before investing significant time and money.



2D GC Made Easy

Setup and operation of 2D GC is made reliable and easy to use by combining Micro-fluidic and EPC technologies. This unique software tool minimizes operator effort by automatically calculating restrictions and pressures. The reproducibility of retention times of the 6890N GC results in improved accuracy and reliability. 2D GC is available pre-configured by Agilent, as a standard option, or as an accessory for existing 6890N GC systems.



2D GC Using Micro-Fluidic Technology

Agilent's patented Micro-fluidic technology greatly improves the performance of 2D GC. Internal volumes are optimized to maximize separation efficiency and eliminate peak tailing. Each device is deactivated to produce superior results even for trace analysis of chemically active compounds. A new fitting and ferrule design simplifies column installation and eliminates leakage even with repeated oven temperature programming to final temperatures over 400 C.

Created for endurance—
now and for years to come.

The Agilent 6890N network GC system incorporates the lessons learned from 40 years of producing the world's best-selling and most reliable GCs. In fact, labs turn to Agilent because they know the instruments will perform accurately and consistently over extended periods— and when they do replace or upgrade a system, they regularly return to Agilent.

You can be sure your Agilent instrument will prove to be a workhorse for your lab, too. Each 6890N network GC system ships with a Declaration of Conformity that certifies it has passed stringent safety tests, ensuring the instrument will meet Agilent's performance specifications. We back it all up with our Agilent Value Promise that guarantees you'll have at least 10 years use from your 6890N (see back panel for details). Now that's a hard-working promise.

Agilent Columns and Supplies— The Perfect Fit

For greater confidence in your GC results, you can optimize your total system with quality Agilent columns and supplies—the perfect fit for the Agilent 6890N network GC system. A wide range of GC columns, supplies, kits, and accessories is designed, manufactured, and tested to rigorous Agilent specifications, under a quality system registered to ISO 9001. Why risk compromising your analytical results with anything less than genuine Agilent consumables?

Backed by Agilent Support

You can also ensure the best performance from your 6890N by relying on a variety of Agilent-brand services. Whether you need assistance in hardware or software installation, performance checks, or on-going technical support, Agilent can help maintain reliable operations over the life of your instrument.

Special Service Bundles

Agilent offers special service bundles that are designed to meet the needs of your laboratory. Essential services include:

- Telephone support to resolve hardware problems
- At-your-site instrument service plus consumables used for repairs
- Off-site instrument repair service
- Annual preventative maintenance

Agilent customer service centers are located worldwide. With Agilent support, you can reduce operational costs, increase laboratory productivity, and lighten the load of regulatory compliance.

See how Agilent training
can work for you.

Agilent has a series of convenient 6890 system GC Web-based training modules. You can learn at your desk—with minimal disruption to work schedules—or wherever you can connect to the Internet. e-Learning gives you focused instruction in instrument theory, operation, routine maintenance, as well as common problems and solutions.

You can view module descriptions, try a demo, register, and purchase modules by visiting www.agilent.com/chem/elearning.

GC e-Learning On-Demand and Live Course Titles and Descriptions

Product Number	Course Title	Description
R1691A	6890 GC Split Inlet Mode Operation	This module teaches you the basic theory and operation of the 6890 GC split/splitless capillary inlet when operating in the split mode.
R1692A	6890 GC Splitless Inlet Mode Operation	This module teaches you the basic theory and operation of the 6890 GC split/splitless capillary inlet when operating in the splitless mode.
R1693A	6890 GC Purged Packed Inlet Operation	This module teaches you the basic theory and operation of the 6890 GC purged packed inlet.
R1694A	Capillary Columns Theory and Operation	This self-paced e-Learning module teaches you the basic theory and operation of capillary columns.
R1695A	6890 GC Keyboard Operation	This self-paced e-Learning module teaches you the basic operation of the 6890 GC keyboard. It is designed to help you to understand all of the keys to gain the maximum benefit from your GC.
R1696A	6890 GC FID Theory and Operation	This module teaches you the basic theory and operation of the FID.
R1697A	6890 GC ECD Theory and Operation	This module teaches you the basic theory and operation of the ECD.
R1698A	6890 GC TCD Theory and Operation	This module teaches you the basic theory and operation of the TCD.
R1699A	GC Automatic Liquid Sampler Operation	This module teaches you the basic operation of the Agilent automatic liquid sampler system (ALS). It is designed to help you gain the maximum productivity from the ALS.
R1700A	Logical GC Troubleshooting	This module teaches logical steps in troubleshooting GC system problems. These steps are designed to identify the source of the problem quickly and prevent the troubleshooting task from becoming overwhelming.

A Sizable Promise

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