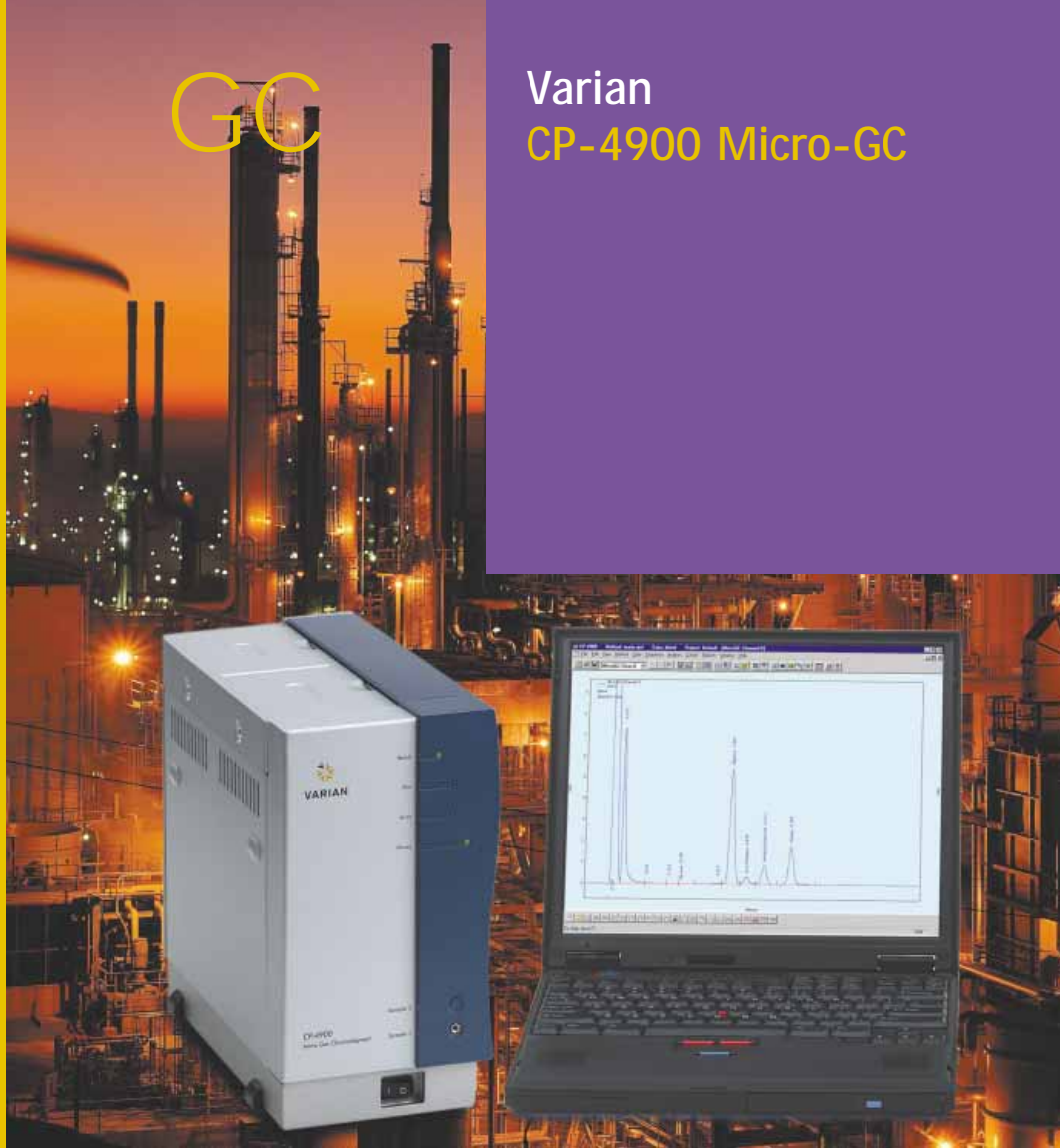


GC

Varian  
CP-4900 Micro-GC



**VARIAN**

# The Speed You Need The Varian CP-4900 Micro-GC for gas analysis

*Immediate answers—separations in seconds.*

*Analyze anywhere—in the lab, in the field, or wherever you need the information.*

*Always ready—GC channels exchange easily for rapid maintenance.*

When the composition of gas mixtures is critical, Varian's CP-4900 delivers the information you need time after time. Our 4th generation micro-GC generates more data in less time for faster and better business decisions.

The CP-4900 is a rugged, compact analyzer for lab-quality gas analysis at any site. With advanced micro-machining and computing technologies, the CP-4900 offers one to four plug-and-play GC channels. Each channel is a separate GC with pneumatics, injector, column, and detector. Low power consumption lets you take your GC to the sample source.

Laptop PC-based software provides control, automation, and reports to make the CP-4900 a powerful and convenient tool for operators of all skill levels.

The CP-4900 from Varian—for simple, reliable, and cost-effective gas analysis wherever you need it!



# Fast, Reliable Answers

## Precise gas analysis in seconds for production and research

- Natural gas
- Refining
- Specialty gases
- Fuel cells
- Oil and gas exploration
- Any area where precise gas analysis saves money and adds value!

## Ready to use immediately

- The CP-4900 arrives configured for your analysis
- Modular design for fast maintenance
- Flash memory for quick software upgrades via the internet
- Reconfigure for new applications in five minutes with user-installed plug-and-play GC channels

## Take the CP-4900 with you

- Weighing from 5.2 kg and just 15 cm wide, the CP-4900 is easy to move
- Optional Field Case with gases and battery power for remote locations
- Start analyses within 15 minutes of power-up
- Laptop PC control of all instrument parameters and data handling

## Local or remote control of operation and data reduction

- Choose either Varian's Star Chromatography Workstation or CP-Maitre Elite for error-free operation
- Standard or custom reports with minimal operator intervention
- Monitor results to set limits, activate alarms, or switch valves
- Standard 4-20 mA signal readout for process control
- Communicate with the CP-4900 from a process control computer via industry-standard RS232, RS485, or Ethernet protocols



# Microtechnology for Maximum Speed

## Improve data and process quality by frequent sampling

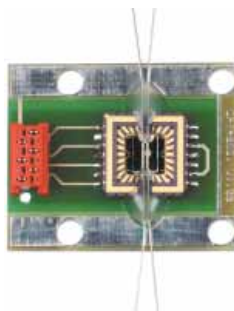
The faster separations provided by narrow-bore capillary GC columns are fully exploited when all sample-associated components of the system are miniaturized. The CP-4900's micro-machined injector and detector, together with a narrow-bore column, deliver rapid separations of permanent gases and vapors.

Additionally, pneumatics for micro-electronic gas control and flash memory to store current method parameters are now integrated with the GC module creating plug-and-play GC channels.

Each GC channel is a complete miniaturized GC with a narrow-bore column for high efficiency separations.



**Efficient sample introduction.** Silicon micro-machined, variable volume injector introduces sample in a narrow band.



**Maintaining separation.** 200 nL volume Thermal Conductivity Detector (TCD) eliminates peak broadening.



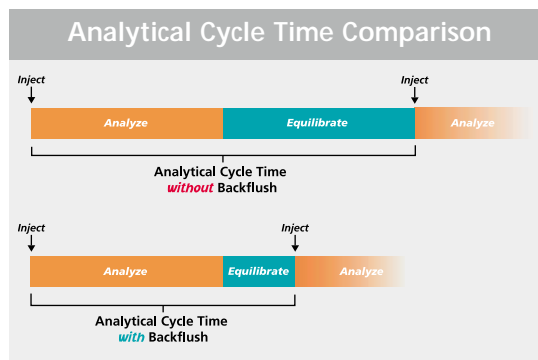
**Faster results with plug-and-play GC channels.** One, two, or up to four channels used in parallel further enhance analytical speed.

## Increase Monitoring Frequency with Backflush Option

With micro-electronic gas control and time-programmable Backflush, you inject sample components of interest while eliminating contaminants.

Backflush prevents less volatile components and water from entering the column. Baseline drift from later eluting contaminants is eliminated, and equilibration time between injections is substantially reduced.

Fast analysis and frequent process monitoring with the CP-4900 ensures high quality end products.



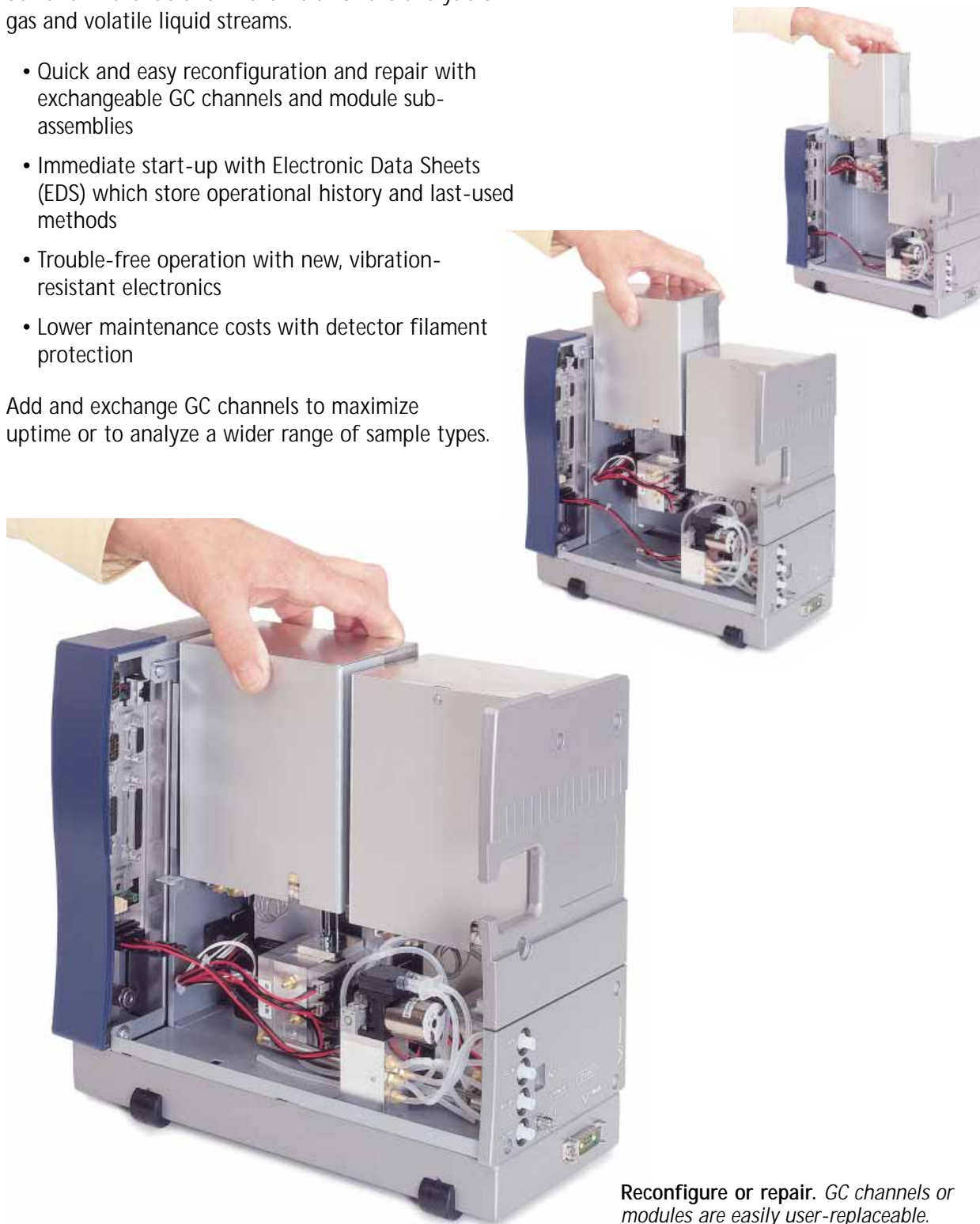
**More analyses in less time for tighter process control.** Backflush reduces the equilibration time between analytical runs for many sample types.

## Reconfigure in Minutes And, easy maintenance when you need it

The CP-4900 delivers the results and ruggedness you demand in the lab and in the field for the analysis of gas and volatile liquid streams.

- Quick and easy reconfiguration and repair with exchangeable GC channels and module sub-assemblies
- Immediate start-up with Electronic Data Sheets (EDS) which store operational history and last-used methods
- Trouble-free operation with new, vibration-resistant electronics
- Lower maintenance costs with detector filament protection

Add and exchange GC channels to maximize uptime or to analyze a wider range of sample types.



**Reconfigure or repair.** GC channels or modules are easily user-replaceable.

# A CP-4900 for Any Application

## Satisfaction guaranteed!

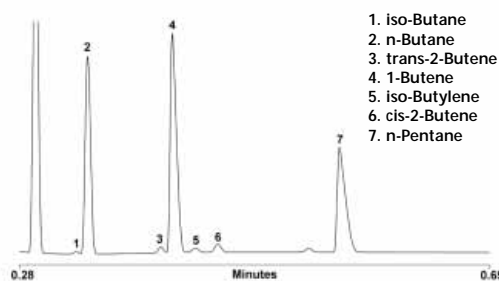
Complex samples such as natural gas and refinery gas are often analyzed on conventional multi-column, multi-valved gas chromatographs. With the CP-4900 Micro-GC, a complete analysis is achieved without valves and in a fraction of the time required with a conventional GC.

The compact CP-4900 analyzes complex gas samples using the selectivity of up to four independent GC channels. Each GC channel, with a different column phase, simultaneously separates a different subset of sample components.

And, single or dual sample inlets and pumps, plus optional gasifier for volatile liquids and pressurized gas streams, enable the CP-4900 to handle a wide range of sample types.

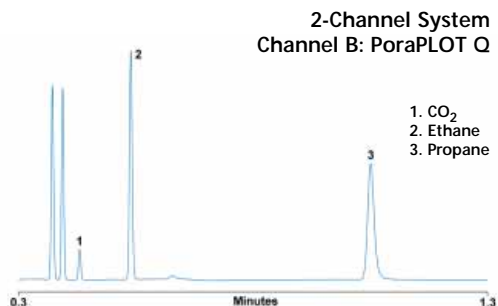
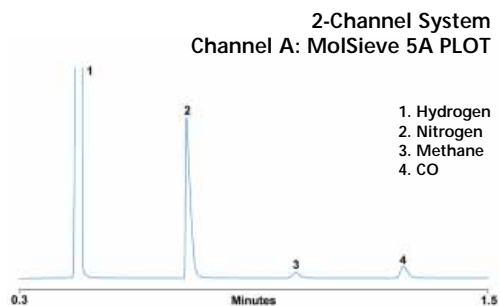
## Refinery Gas

4-Channel System  
Channel A: Al<sub>2</sub>O<sub>3</sub>/KCl-PLOT



**Less than four minutes.** A full analysis of refinery gas, including hydrogen, nitrogen, CO, and CO<sub>2</sub>, is complete in less than four minutes on a four-channel system. Channel A shows the separation of hydrocarbon components.

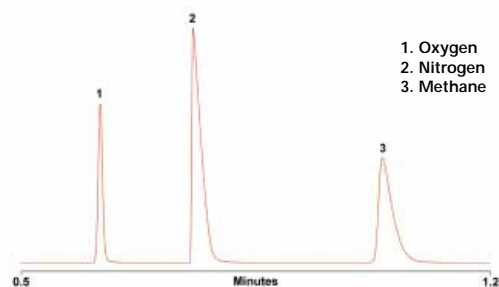
## Fuel Cells



**Better characterization in less time.** Optimize fuel cell operation and design with information generated by a two-channel CP-4900.

## Industrial Gases

Single-Channel System  
Channel A: MolSieve 5A PLOT

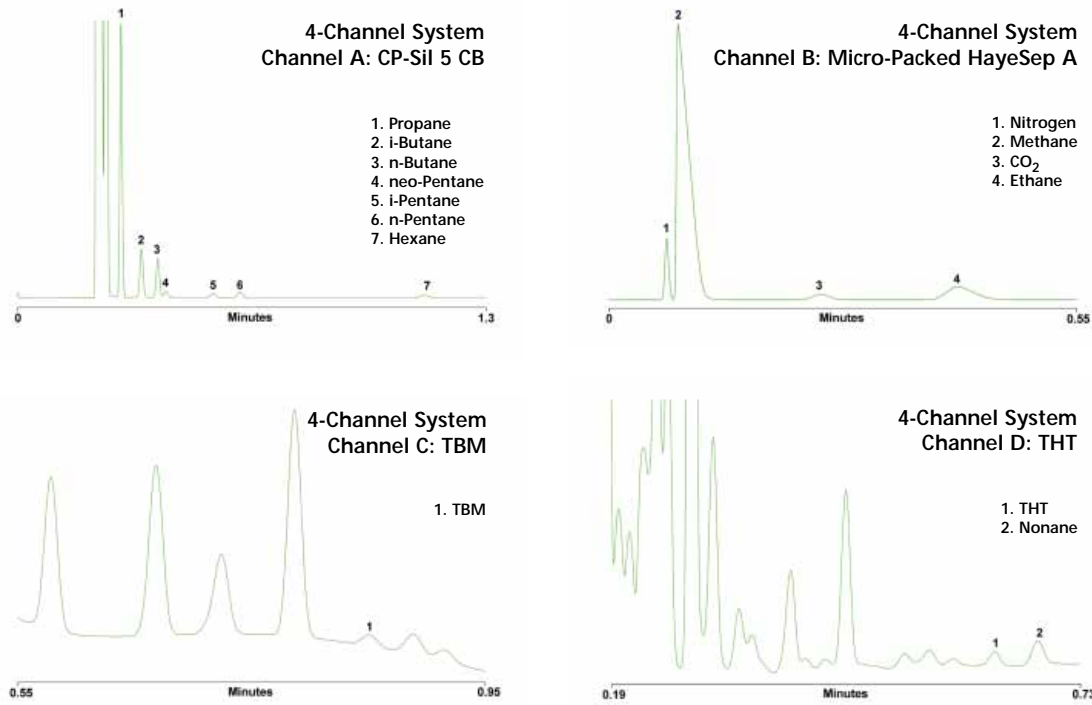


**Accuracy, speed and profitability.** Precise and frequent gas mixture measurements are essential to successful specialty gas manufacturing.

# Natural Gas Analysis

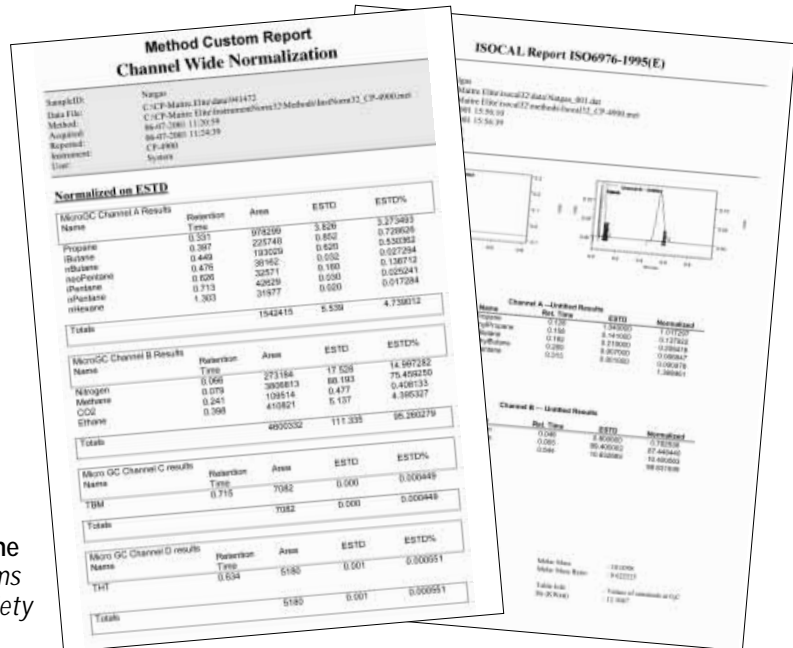
## One injection, four simultaneous separations

### Complete Natural Gas Analysis in 90 Seconds



Immediate and accurate calorific content. Monitor natural gas components, including odorants, as often as you need to assure product quality and correct value.

Four simultaneous separations in one report. Data from four chromatograms are combined and presented in a variety of easy-to-read reports.



# On the Road with CP-4900

## Gas analysis in the field

The CP-4900's small size and light weight lets you move it easily to analysis sites in the field, e.g., refineries, drilling locations, and natural gas pipelines. Portability is the solution when transporting samples to the laboratory is impractical or when sample integrity may be compromised in transit.

Two gas cylinders and two rechargeable battery packs give eight hours of productive field time. Operation is continuous with battery packs which easily exchange while the GC is running. Instrument control, data analysis, and diagnostic testing can be carried out at the instrument or over the internet for a CP-4900 in the field.

Preserve samples, protect data quality, and get immediate answers by taking the CP-4900, in its portable Field Case, right to your sample source.

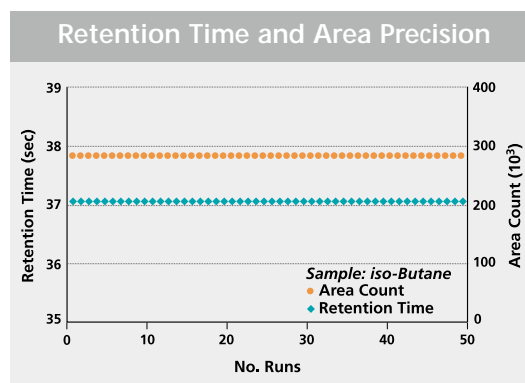


Lab-quality gas analysis in the field. With its rugged Field Case, the CP-4900 is easy to transport to the sample source.

### Superior Precision in a Portable Package

Fast, accurate, and reliable data drive operation and business decisions. With easy-to-use software and rugged hardware, the CP-4900 is ideal for gas analysis in the lab or in the field—wherever you need it!

- Handle low and high level analytes in a single run with auto-ranging detector
- Minimize condensation and maintain sample integrity with injector and sample lines controllable to 110 °C
- Link variables such as temperature, pressure, and flow to sample composition for more accurate and comprehensive reports



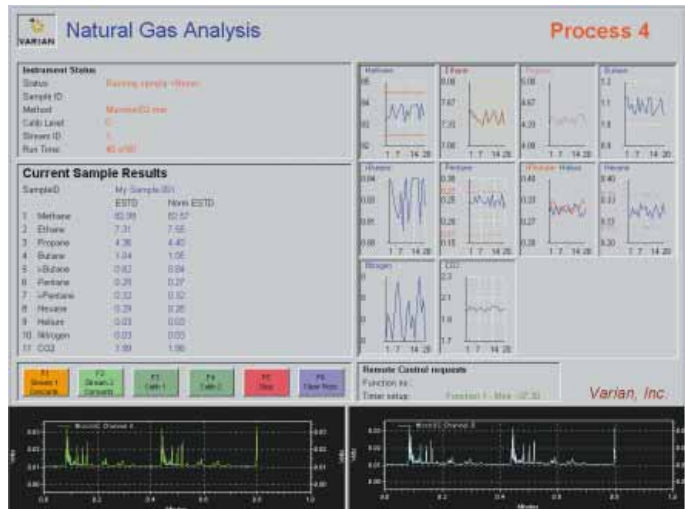
Superior performance. Capable of retention time precision of 0.03% RSD and peak area precision of 0.13% RSD, the CP-4900 meets your need for accurate data.

# Routine Analysis and Reporting With minimal operator intervention

Run the CP-4900 and immediately view results from a laptop or desktop PC. Simple control screens plus standard or customized reports are easily managed by non-specialist operators.

For compatibility with laboratories around the globe, Varian offers a choice of outstanding workstation products—Star Workstation and CP-Maitre Elite. Password protection on both workstations eliminates unauthorized data access and method editing.

As an option to a locally sited workstation, the CP-4900 can be controlled from virtually anywhere in the world through a PC and the internet.



Minimal data entry to launch methods. Using pre-defined CP-Maitre Elite User Shells (Quick Start Applications with Star Workstation), sample-specific instrument control and data handling methods are easily launched.

## Regulatory Compliance

Both Star Workstation and CP-Maitre Elite offer reports which meet regulatory agency requirements, particularly for the natural gas and petrochemical industries.

Varian's ISOCAL and BTU software packages take analytical data from the CP-4900. Specific natural gas properties, such as calorific value, density, relative density, compressibility, and Wobbe Index are included in reports which meet ISO 6976, GPA 2171, and ASTM D 3588 standards.

In addition to providing pre-packaged software solutions, Varian will consult with you to develop custom software for your specific application.



Varian custom software solutions. Improve productivity and ease-of-use with additional applications such as valve control and data transfer to Microsoft® Excel.

# Varian Applications and Technical Support

## All the support you expect and need

Varian is ready to meet your needs with pre-packaged software solutions for the CP-4900 or consultation to develop custom software for your specific application.

To further support the CP-4900, Varian offers a comprehensive range of technical services including:

- Technical assistance with experienced scientists to answer your chemistry-related questions
- Expert, factory-trained Field Service Engineers
- Chromatography training courses for new and experienced users
- Customized training in your laboratory using your instruments and methods

Varian's reliable analytical instruments and superior customer support ensure enhanced productivity, minimal downtime, and maximum return on your investment.

Varian is with you for all your support needs!



**Classroom and on-site training.** *Select from a wide variety of courses held at Varian facilities or create a customized program using your methods and instrumentation.*



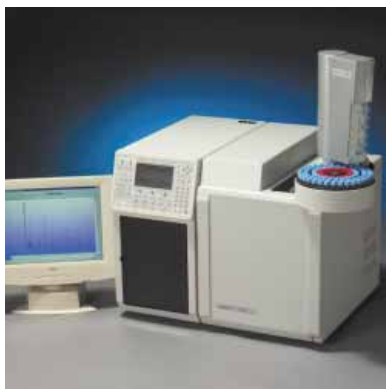
**Technical support for the lifetime of your system.** *For responsive customer support you can rely on our Help Desks in the USA and Europe.*

# Meeting Your Analytical Needs

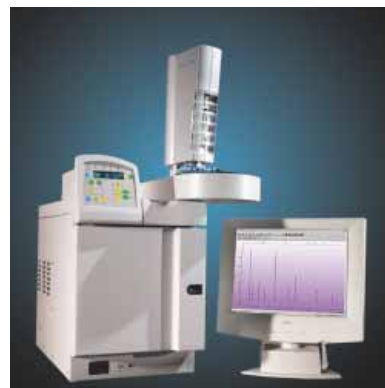
## Varian systems, services, and supplies

Varian's 50-plus years of continuous innovation in analytical instrumentation assures you the best in high performance products and services. Varian is committed to providing analytical products and supplies at affordable prices supported by superior customer service.

Advance your analytical capabilities today. Speak with a Varian representative to discuss your specific application needs, or to request your free Varian Chromatography and Spectroscopy Supplies Catalog.



**Varian CP-3800 GC.** A versatile three-channel laboratory GC with a complete range of injectors and detectors for any application.



**Varian 3900 GC.** A small, easy-to-use single channel laboratory GC for high-throughput routine analyses.



**CP-Sil Low Bleed Capillary Columns with EZ-GRIP.** Low column bleed means higher precision for GC and GC/MS analysis. EZ-GRIP makes column installation quick and simple.



**CP-Gas Clean Filters.** Extremely efficient filters remove moisture and oxygen to extend column life for both micro-GC and laboratory GC systems.

**Varian, Inc. serving  
worldwide markets in:**

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Basic Chemical  
Biotechnology  
Clinical  
Electronics  
Environmental  
Photonics  
Toxicology  
Pharmaceutical  
Food and Beverage  
Metals and Mining  
Petroleum and Petrochemical



Varian is committed to a process of continuous improvement which demands that we understand and then meet or exceed the needs and expectations of our customers – both inside and outside the company – in everything we do.

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