



Agilent 490 Micro GC

**GO MOBILE
WITH A COMPLETE, PORTABLE GC**



Agilent Technologies

MEASURE ANYWHERE AND GET THE RESULTS YOU NEED IN SECONDS

The goals that motivate Agilent innovation are also your goals: maximum reliability and trouble-free operation under all conditions. And this spirit of innovation is reflected in the Agilent 490 Micro GC.

With its rugged, compact, laboratory quality gas analysis platform, the 490 Micro GC generates more data in less time for fast, confident business decisions. When the composition of gas mixtures is critical, count on this fifth generation micro gas chromatograph instrument to deliver every time.

Flexibility to suit your application

The 490 Micro GC is available in optional sizes and configurations.

- A 19-inch rack mounted chassis is available for process control applications. (Rack mounting of hardware may be required.)
- A self-contained, portable version can be used at measurement locations where no carrier gas or power is available. Built-in gas cylinders and rechargeable battery provide up to eight hours of productive field time.



Designed for flexibility and ease-of-use

The Agilent 490 Micro GC maximizes flexibility and customization with options such as optimized sample conditioning, up to two sample inlets, and up to two carrier gases.

What's more, the Agilent 490 Micro GC is practical and easy to use. With available autonomous operation, engineers and analysts alike can generate measurement results without special training or skills.

Quick, easy start-up lets you achieve results in minutes, even if you change measurement locations frequently



Modular and ready to perform

Preconfigured and factory tested for your specific needs, the Agilent 490 Micro GC arrives ready to perform. Its modular construction lets you quickly reconfigure the system in the field for new applications, using simple plug-and-play GC channels.

Two bench-top cabinets are available: the DUAL version (1 to 2 channels) and the QUAD version (1 to 4 channels). Every channel is a complete, miniaturized GC with electronic gas control, injector, narrow-bore column, and detector for sensitive, efficient separations. Each channel also has independently controlled injection volume, oven temperature, and carrier gas.

In addition, micro-electronic gas control lets you analyze components of interest while eliminating those that are not. Plus, time-programmable backflush prevents less volatile components, moisture, and other undesired contaminants from reaching the column.

Go mobile: Bring your instrument to your sample

The Agilent 490 Micro GC delivers fast, accurate, reliable analysis right at the sampling point. What's more, the instrument features a new User Interface—plus easy connection to a tablet or smartphone—so you don't have to take your laptop and cables into the field. Combined with our new field case with on-board gas cylinders and batteries, the 490 Micro GC is perfectly suited to analyze samples anytime, anywhere.

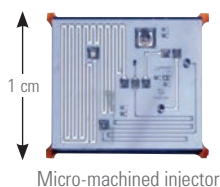


To learn how the Agilent 490 Micro GC can help you make better business decisions, visit www.agilent.com/chem/microgc

ACTIONABLE AND DEFENDABLE RESULTS, FAST

State-of-the-art technologies such as narrow-bore capillary GC columns, micro-machined injectors, and micro-machined thermal conductivity detectors (μ TCD) deliver separation gases in seconds.

Micro-machined injector



- **Higher dependability.** Silicon micro-machined injector has no moving parts
- **More functionality.** Software-selectable injection volumes from 1 μ L to 10 μ L cover a wide range of application requirements

- **Eliminate wear and tear.** Available backflush capability keeps the analytical column well protected
- **Improved performance.** Injector can be heated to 110° C, which eliminates discrimination of higher hydrocarbons

Other innovative features



Inert sample flow path

As regulatory agencies drive detection limits lower for increasingly complex samples, you cannot afford adsorption caused by flow path activity. That is why we Ultimet™ treat the critical parts of our Micro GC. This results in a superior inert sample flow path—ensuring the best possible detection limits and long-term instrument stability.



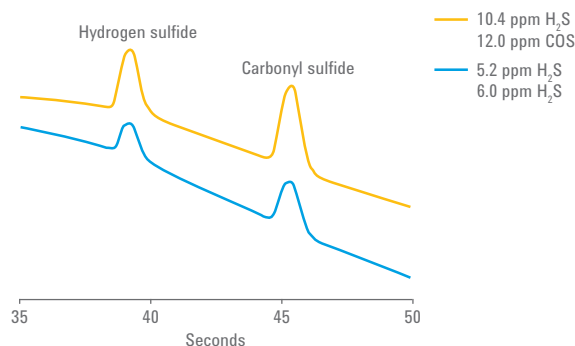
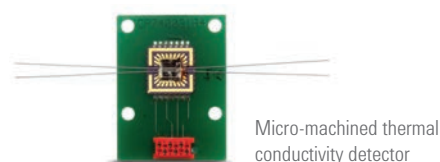
Fixed sample IN at the rear of the instrument

The Sample IN connection was relocated from within the Micro GC to the instrument's rear panel. Together with the front inlet for manual gas tight syringe injections, the instrument provides maximum flexibility to analyze your gas samples.

Micro-machined Thermal Conductivity Detector (μ TCD)

- **Better data quality.** 200 nL internal volume eliminates peak broadening
- **Greater sensitivity.** Detection limit* are:
 - 0.5 ppm for WCOT capillary columns (CP-Sil 5 CB, CP-Sil 13 CB, CP-Sil 19CB and CP-WAX 52 CB); 4-10 m
 - 2 ppm for PLOT columns (Molsieve 5Å, PoraPLOT Q, PoraPLOT U, Aluminumoxide, SilicaPLOT)
 - 2 ppm for Micropacked columns (Hayesep, MES)
 - 10 ppm for Micropacked columns (Carboxene)

**Detection limits are typical for selected components provided that the proper column length and chromatographic conditions are used.*



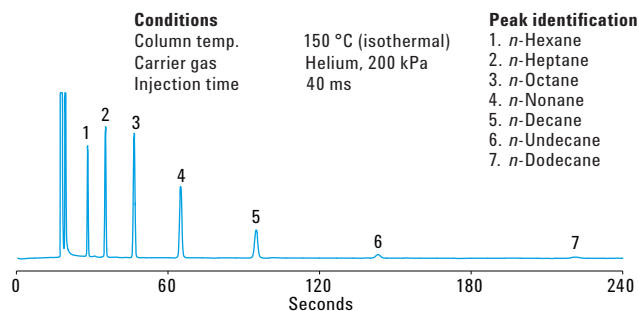
ANALYZE AND MEASURE WITH CONFIDENCE

Key applications

The Agilent 490 Micro GC provides gas analysis in a matter of seconds. It delivers unparalleled performance in any application where precise gas analysis saves money and adds value. Examples include:

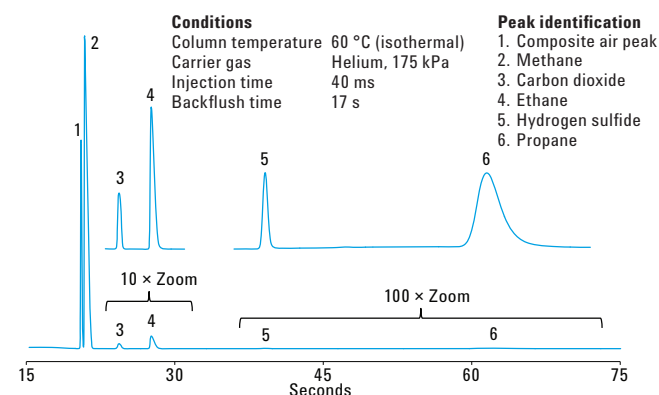
- Natural gas composition/calorific value determination
- Natural gas odorants
- Liquefied natural gas (LNG)
- Coal seam gas
- Fuel cell
- Analysis of simple to complex refinery gases
- Liquefied petroleum gas (LPG)
- Stack emissions monitoring
- Oil/gas exploration, mud logging
- Assessing efficiency of catalysts
- Syngas
- Biogas/biomethane
- Landfill gas
- Mine safety analysis
- Dissolved gas analysis (DGA)
- Analysis and quality control of specialty gases
- Impurities in industrial gas
- Air monitoring
- Fixed gas

Hydrocarbons



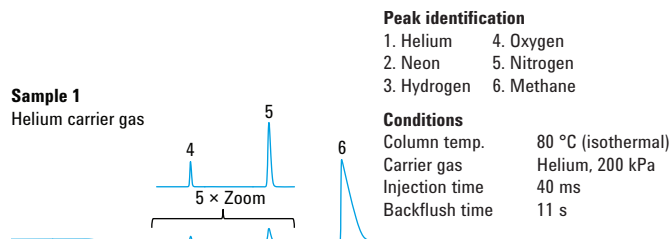
Analysis C7–C12 hydrocarbon mix on an 8-meter CP-Sil 5 CB.

Natural Gas

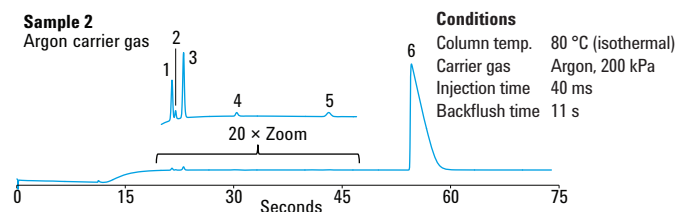


Chromatogram for natural gas on the PoraPLOT U column channel.

Permanent Gases



Analysis of permanent gases on a 10 m Molesieve 5Å column.





GO MOBILE

The 490 Micro GC, in combination with the Field case, is designed for out-of-lab use. Bringing the analyzer to the sample with “lab quality” results ensures maximum flexibility in your daily analysis.

490-Mobile version

- Control via phone or tablet
- On-board data handling
- Easy to use in remote locations

PROCESS ANALYSIS

490-PRO version

- On-board data handling and result calculations
- Unattended operation
- Extended industry standard communication protocols

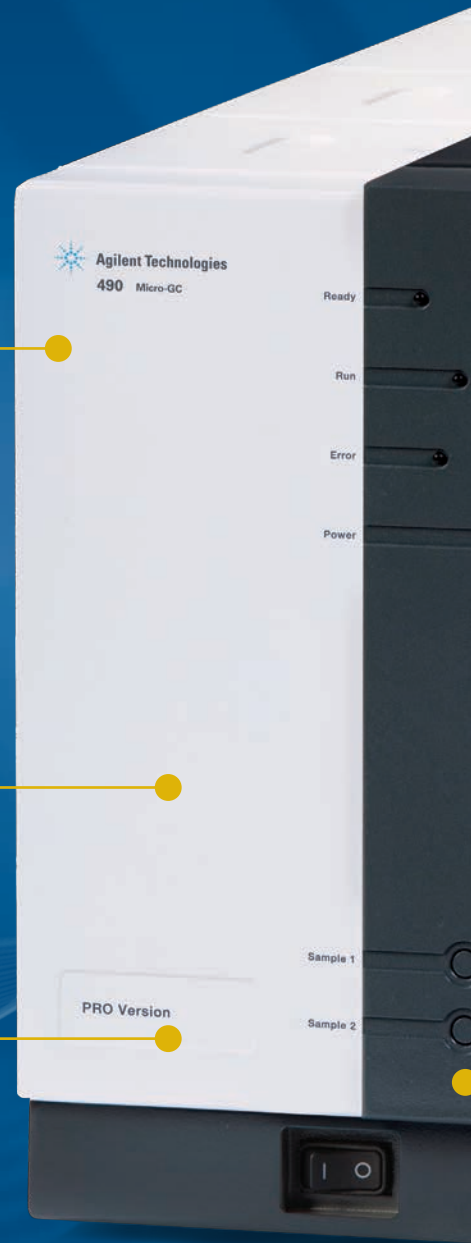
APPLICATIONS

Customize the 490 with up to four unique columns that can be run in parallel. Each column allows its own calibration, temperature setting, injection volume, and flow rate. These features make the 490 the most versatile Micro GC available.



INERT SAMPLE FLOW PATH

Implements the latest technology to deactivate the complete sample path.



COLUMN CHEMISTRIES

A full range of Agilent-made column chemistries are available to serve even the most demanding separations and applications:

- CP-Sil 5 CB
- CP-Sil 5 CB for NGA
- CP-Sil 13 CB for TBM
- CP-Sil 19CB
- CP-Sil 19 CB for THT
- CP-WAX 52 CB
- Molesieve 5Å
- Aluminumoxide
- PoraPLOT Q
- PoraPLOT U
- Hayesep A
- Carboxene 1000
- SilicaPLOT
- MES in NGA



SAMPLE INLET

- Rear - Standard 1/16" connections
- Front - Manual injection via a septum or luer lock connection



ECO-FRIENDLY

- Low carrier gas consumption (approximately 10% compared to a bench GC)
- Low energy consumption
- Compact design, very small footprint

PRECONFIGURED ANALYZERS

Factory configured, tuned, and tested to start producing results immediately after installation. Analyzers include:

- Biogas
- Natural Gas
- Customized to get you on the fast track

MEMS TECHNOLOGY

Ultra low internal volume Micro machined injector and detector for fast analysis

To learn more about the Agilent 490 Micro GC, visit
www.agilent.com/chem/microgc

COMPREHENSIVE AND FLEXIBLE SYSTEM CONTROL

The Agilent 490 Micro GC is designed to work with Agilent OpenLab CDS for optimal results. OpenLab CDS supports instrument control and digital data acquisition from a vast number of chromatographic systems and related hardware manufacturers around the world.

- **Single platform for all instruments.** There is no need for costly deployment of multiple software packages from different vendors.
- **Scalable and easy to use.** All versions share a common user interface and common formats for data and method files. Regardless of initial deployment size, OpenLab CDS can seamlessly grow with your lab – without the need for costly user retraining and method revalidation.



EASILY SET UP THE 490-PRO

Designed to be a “system” component, the 490-PRO Micro GC does not require an external computer to generate data and results. Instead, it features on-board data collection, integration, and result generation. User-defined information is then automatically passed on to an external system (such as process control) in a completely unattended manner.

For added convenience of on-line/at-line analysis, the 490-PRO Micro GC is also available in a 19-inch rack mounted chassis. Sampling and sample conditioning devices, such as stream selection valves and Genie membrane filters, can be mounted within the housing. What’s more, the 490-PRO Micro GC does not use flammable gases, and requires only small quantities of sample gas for analysis and monitoring, making it the preferred choice for environments where operational safety is paramount.

Powerful PROstation software allows you to quickly set up the initial analysis method and validate the application. The on-board data handling system takes over complete operation of the 490-PRO Micro GC.

- **Wide range of applications.** For bulk and trace analysis, including complex sample compositions.
- **Standalone functionality.** Does not require an external computer.
- **Safe to operate.** The instrument does not require flammable gases to operate and uses a small quantity of sample gas.



Agilent 490-PRO Micro GC in a 19 inch housing



Agilent 490-PRO Micro GC

GAS ANALYSIS IN THE FIELD, MADE EASY



Micro-Gasifier

Expand the range of samples you can analyze

The Micro-Gasifier ensures controlled liquid petroleum gas (LPG) and liquefied natural gas (LNG) sample evaporation before the sample is introduced into the GC injector. High-pressure gas samples can also be reduced without creating cold spots, preventing sample discrimination.



Accessory bracket

Keep accessories close at hand

This on-board universal mounting platform occupies one channel position in the 490 Micro GC. It allows easy integration of stream selection valves, Micro-Gasifier, Genie membrane filters, pressure regulator, sample pressure sensors, and sample relief valves.



Syringe injection

Improve sample handling flexibility

Syringe injection lets you analyze ad hoc samples more easily. Gas samples can be injected with a syringe via the optional inlet on the front of the 490 Micro GC. The sample can also be introduced via a septum cap or by using a Luer-lok connection.

Genie membrane filter

Ensure reliable particle removal

The Genie membrane filter removes particles and liquids from your gas sample—ensuring proper functioning of the micro-machined injector for long-term reliable results. What's more, the filter is suitable for ppb up to percentage-level analysis, is fully inert, and is compliant with calorific value determination methods.



Field case

Provides on-the-go measurement convenience

Easily transport your 490 Micro GC in this self-contained field case. It's the ideal solution for perimeter monitoring, multiple drilling locations, and transporting to natural gas pipelines and metering stations. Analysis and testing can be conducted on-site or remotely through the Internet.

A COMPREHENSIVE PORTFOLIO FROM THE WORLD GC LEADER



Agilent provides the industry's broadest selection of gas chromatography (GC) and gas chromatography/mass spectrometry (GC/MS) systems, support, and supplies. So whether you need flexible, reliable hardware and software for complex research; simple, robust systems for routine production environments; or fast, rugged portable solutions for real-time measurements in the plant or in the field, we have a GC or GC/MS to meet your analytical and business challenges.



High-quality Agilent GC columns are designed and manufactured to offer excellent, reproducible performance for benign to the most difficult sample types. With the lowest bleed levels... the best inertness for acids, bases, or mixed functional compounds... and the tightest column-to-column reproducibility, Agilent GC columns perform better than any other columns on the market.



Ensuring clean gas delivery is essential for accurate gas chromatography. Agilent Gas Clean Filters provide leak-free filter replacement that reduces downtime. They are very economical, with immediate payback, and the highly sensitive filter indicators provide maximum instrument protection.

Agilent
CrossLab

From Insight to Outcome

Agilent CrossLab

Solve complex challenges with help from a true business partner. Agilent CrossLab services and supplies support your organization's unique goals. You also have access to expert insights for improving economic, operational, and scientific outcomes.

The Agilent 490 Micro GC—fast gas analysis where and when you need it

Go mobile with these innovative features:

- More data generation in less time for faster, better business decisions
- Compact dimensions, easily transportable
- Modular and flexible; easily reconfigured for a variety of applications
- Easy to operate without special training or skills
- Industry-leading sensitivity and accuracy
- Small carbon footprint with minimal power and carrier gas consumption
- Out-of-lab solution with “lab quality” results

Learn more:

www.agilent.com/chem/microGC

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