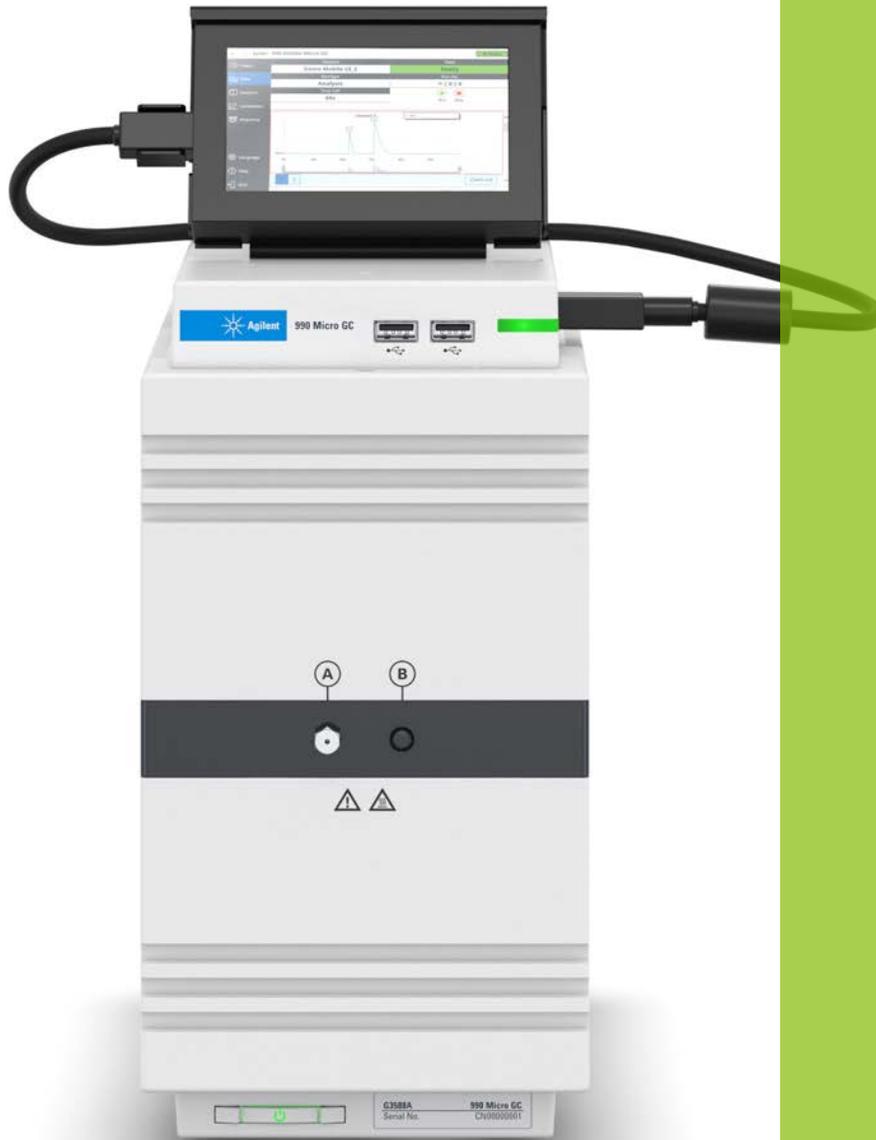


The Vital Answers You Need, in the Lab or in the Field



Agilent 990 Micro gas chromatography systems





Agilent Intelligent Micro GCs Deliver Speed and Reliability in a Compact Footprint

Whether you are locating natural gas deposits, evaluating biogas, hydrogen, monitoring well efficiency, or measuring samples in your lab, you need fast, reliable results. Agilent 990 Micro GC systems combine innovative, industry-leading features with the quality and speed that are critical to your gas analysis.

With their compact, lab-quality gas analysis platform, Agilent 990 Micro GC systems let you generate more data in less time for fast, confident business decisions.

This Ebook Is Your Guide to the Agilent 990 Micro GC Family

Agilent 990 Micro GC systems feature innovative technologies that deliver gas separation in seconds. And, they do it in less space—and with less power and carrier gas consumption—than benchtop GC systems. Plus, their quick, easy startup lets you achieve results in minutes, even if you change measurement locations frequently.

To instantly access system descriptions, application notes, and more, simply choose one of these topics.

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Intelligent GC: Spend Time on What Matters, Where It Matters

Only Agilent brings you a family of innovative GC systems that are both smart and insightful. They go beyond collecting system information to help you increase productivity, minimize downtime, and improve efficiency. And, that means you can keep your lab moving toward a successful future.

How does Micro GC fit into our smart GC portfolio?

Agilent 990 Micro GC systems let you analyze gas samples wherever and whenever you need. Micromachined components and onboard data handling functions give you continuous unattended operation, easy troubleshooting, and portability. Self-aware features and diagnostics identify and alert you to possible errors before they affect your results.

With options for sample conditioning, inlets, carrier gases, and user interfaces, every 990 Micro GC fits the way you work. Modular construction lets you quickly reconfigure the system using plug-and-play GC channels. In addition, the ability to make onsite channel repairs saves time and cost.

The challenge:

"Taking and transporting gas samples is expensive, inconvenient, and error prone."

The solution: Ultimate portability

Anyone who performs field sampling is familiar with the pitfalls of condensation, labeling, contamination, and nonhomogenous samples—not to mention the cost of sample carriers.

Agilent 990 Micro GC systems let you bring your GC to the sample, allowing unattended process monitoring 24/7. What's more, you can monitor up to 32 streams sequentially without interruption. Even calibration can be performed outside your lab without the need for canisters, sample cylinders, or Tedlar bags. Micro GC is also a great choice for pilot plants, because they do not require an added investment in lab space or staff.

The challenge:

"Our lab is under intense deadline pressure."

The solution: Shorter cycle times

Depending on your application, Agilent 990 Micro GC systems deliver actionable results quickly with cycle times of 30 seconds to 2 minutes. These shorter cycle times allow you to gather enough data points for short-term process monitoring (e.g., catalysis) or safety monitoring (e.g., in mining). Backflush configurations speed up cycle times as well, while also protecting your columns.

The challenge:

"We have severely limited lab space."

The solution: A shoebox-sized footprint

Micro GC systems deliver actionable results in seconds using half the bench space and a fraction of the power when compared to most traditional GCs.

The challenge:

"GC operation is too complex for anyone but our most experienced analysts."

The solution: Powerful, user-friendly software

Agilent 990 Micro GC systems work with Agilent OpenLab CDS software for optimal data capture, analysis, and sharing. In addition, the 990 PRO and 990 Express Micro GC systems use Agilent PROstation, which makes your GC setup and method development simple and intuitive.

The challenge:

"What about sample size and integrity concerns?"

The solution: Reliable and accurate results

With accessories like our gasifier, filter, and pressure regulator, you can feel confident that the sample in the line is the sample being analyzed. And thanks to the unique micromachined sampling injector, Agilent 990 Micro GC systems only need 10 mL of sample (including line flushing) for a reliable result.

The challenge:

"Our GC systems consume large amounts of energy and gas."

The solution: Reduced environmental impact

The latest GC innovations make it possible to lower your environmental impact while continuing to optimize workflows and lower costs. Agilent 990 Micro GC systems use approximately 10 mL/min of carrier gas per channel and support alternate carrier gases, such as argon, hydrogen, and nitrogen. They also have lower power requirements (150 W) than standard GC systems.

Resources for achieving fast, reliable GC analysis inside—and outside—your lab

Smart GC systems

-  [This Is How You GC](#)
-  [Integrated, Intuitive GC Intelligence](#)

Software

-  [OpenLab CDS](#)
-  [Agilent PROstation](#)

Brochure

-  [Fast, Reliable GC Analysis In or Out of Your Laboratory](#)

Choose the Agilent 990 Micro GC System that Suits Your Applications



No two labs have the same gas analysis needs. And whether you need a go-anywhere GC or a modular, ready-to-perform system, you'll find a 990 Micro GC that delivers reliable results on location.



Agilent 990 Micro GC system: Fast, reliable analysis without wasting valuable space

The 990 Micro GC system gives you actionable results in seconds using half the bench space and less than half the power of most traditional GCs. Each channel is a miniaturized GC with electronic gas control, injector, narrow-bore column, and detector. The channels also feature independently controlled injection volume, oven temperature, and carrier gas—making reconfiguration simple.

[Look closer](#)



Agilent 990 Express Micro GC system: Ready to go at a moment's notice

This portable, self-contained GC system includes a rugged field case with onboard gas cylinders and rechargeable batteries. So, you can bring your analyzer to the sample with ease. It's perfect for monitoring perimeters, multiple drilling sites, and natural gas pipelines.

[Look closer](#)



Agilent 990 PRO Micro GC system: All-in-one process control

Featuring Agilent PROstation software, the 990 PRO is designed for unattended data collection, integration, and result generation. PROstation enables onboard reporting of key sample properties in a fully compliant manner. It also eliminates the need for manual post-run calculus, minimizing human error. This system is ideal for monitoring online catalytic reactors, natural gas odorants, calorific values of natural gas, and dissolved gases in mud logging.

[Look closer](#)

Sample Preparation Accessories: Reduce Pressure and Maintain Sample Integrity

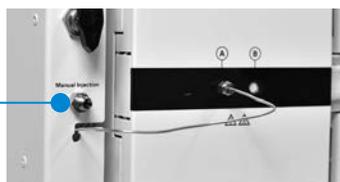


Optimized for the 990 Micro GC, these accessories help you expand your application options, improve flexibility, remove particles, and get the information you need in real time.



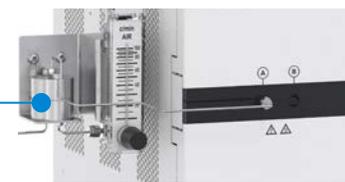
Micro-Gasifier

Control liquid petroleum gas (LPG) and liquefied natural gas (LNG) sample evaporations before introduction into the GC injector. High-pressure samples can also be reduced without creating cold spots, preventing sample discrimination.



Syringe injection

Inject gas samples via an optional inlet on the front of a 990 Micro GC. This setup is ideal for labs with small sample amounts or different samples that originate from various sources.



Genie membrane filter

Remove droplets and particles from the sample gas stream and ensure proper injector function for long-term reliable results. This filter is suitable for ppb up to percentage-level analysis, is fully inert, and is compliant with calorific value determination methods.



Stream selection valve

Automated valves let you spend more time on your science by eliminating the need to manually monitor and switch valves. Plus, the consistency of these valves enables you to accurately cross-reference data from multiple sample streams on the same GC.



Pressure reducers

Beswick pressure reducers are factory tuned to 0.7 bar (10.1 psi), and the needle valve flow is set at 20 mL/min. That means trouble-free compatibility with your Micro GC injector.



Optional touch screen

This 4.3"-wide screen is the perfect choice if you want a quick status overview of your instrument. A start/stop function is also available.

To shop for these and other Micro GC accessories, visit our [product page](#).

Micro GC Applications



Every Agilent 990 Micro GC delivers unparalleled performance for all applications that demand precise gas analysis. These application notes will show you how.

Energy and Chemical

Natural gas

[Calculation of Natural Gas Calorific Value with the Agilent 990 PRO Micro GC System](#)

[One-Minute Natural Gas Analysis Using the Backflush-to-Detector Option](#)

[Rapid Analysis of Mud Logging Well Gas Using the Agilent 990 Micro GC](#)

[Fast Analysis of Natural Gas Using the Agilent 990 Micro GC Natural Gas Analyzer](#)

[Analysis of Tetrahydrothiophene \(THT\) in Natural Gas Using the Agilent 990 Micro GC](#)

[One-Minute Analysis of Mud Logging Gas Using the Agilent 990 Micro GC](#)

Refinery gas

[Refinery Gas Analysis Using the Agilent 990 Micro GC](#)

[Determination of Hydrocarbon Composition in Liquefied Petroleum Gas Using the Agilent GC Gasifier and the Agilent 990 Micro GC](#)

Green energy, biogas, and hydrogen

[Biogas Analyzer Based on the Agilent 990 Micro GC](#)

[Hydrogen Impurity Analysis Using the Agilent 990 Micro GC](#)

Chemical

[The Analysis of Swelling Gas in Lithium-Ion Batteries with an Agilent 990 Micro GC](#)

[Ammonia Analysis Using the Agilent 990 Micro GC](#)

Noble gases

[Argon and Oxygen Analysis Using the Agilent 990 Micro GC](#)

[Analysis of Impurities in Helium Using the Agilent 990 Micro GC](#)

[Noble Gases Analysis Using the Agilent 990 Micro GC](#)



Environmental

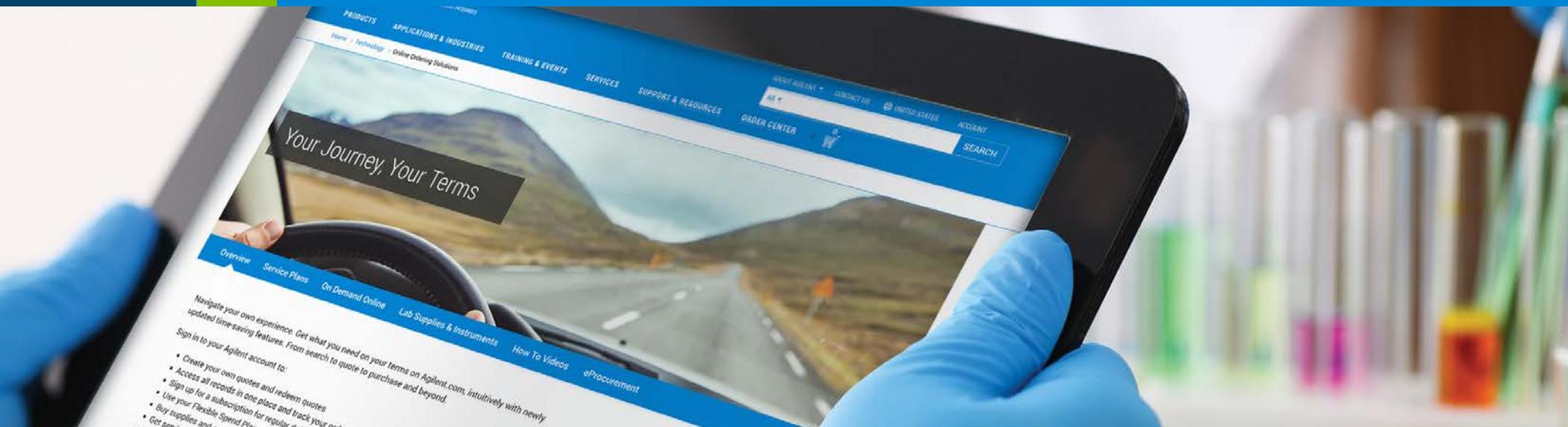
[Hot Spring Gas Analysis for Earthquake Surveillance Using the Agilent 990 Micro GC](#)

[Sulfur Dioxide Analysis Using the Agilent 990 Micro GC](#)

[CO₂ Reduction Gas Products Analysis Using the Agilent 990 Micro GC](#)

[Trace-Level Hydrogen Sulfide and Carbonyl Sulfide Analysis on the Agilent 990 Micro GC](#)

[BTEX Analysis with the Agilent 990 Micro GC System](#)



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Few tasks are more tedious than writing endless POs. Now, you don't have to, because the Agilent Flexible Spend Plan makes it easy to apply funds to a flexible spending account. You can use the funds for what you need, when you need it—from columns and supplies, to vials, standards, services, and more.

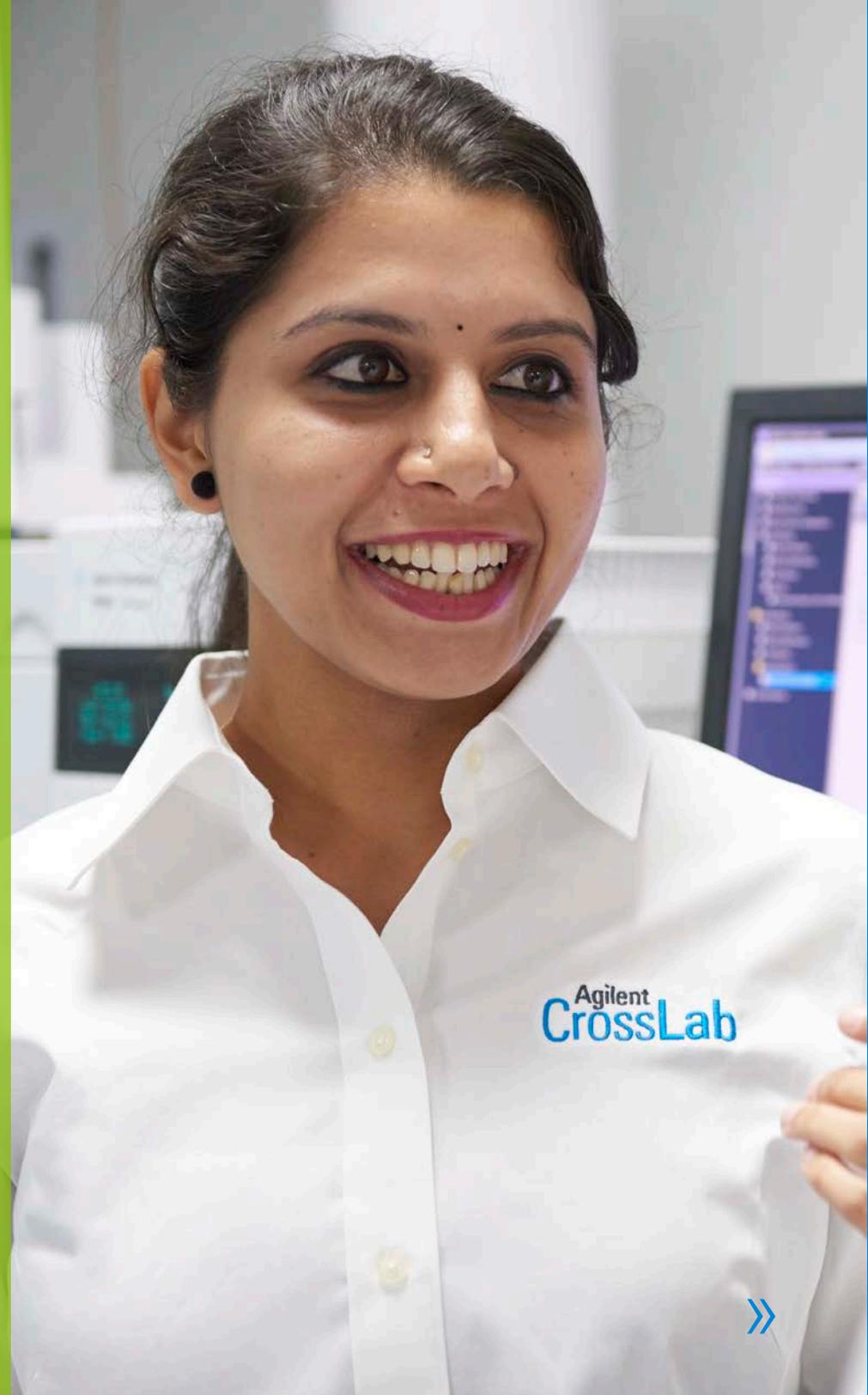
Agilent CrossLab: Supporting Your Success

CrossLab is an Agilent capability that integrates services and consumables to support workflow success, improve productivity, and enhance operational efficiency. In every interaction, we strive to provide insight that helps you achieve your goals. We offer a wide range of products and services—from method optimization and training to full-lab relocations and operations analytics—to help you manage your instruments and your lab for best performance.

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