Agilent
Trusted Answers

Want to maximize your return on innovation?

Agilent Intuvo 9000 GC system





Do you want better business results for your lab?

With the Agilent Intuvo 9000 GC system, these Wishes are reality.

For decades, the development of devices has for gas chromatography (GC) only little new done. With Intuvo, however, there is now a transformative innovation. An innovation through which the GC in many Points are completely redefined – and thus completely It opens up new paths to greater productivity.

Intuvo integrates device, consumables, software and services and offers many practical Advantages for the GC laboratory. Also offers Intuvo a number of new basic technologies that otherwise There is nowhere available. The innovative design that ease of use and speed of Intuvo increases the success of laboratories worldwide. With Intuvo in your laboratory you can:

- Achieve additional substantial savings
- Increase the number of your daily sample runs
- Reduce your power consumption
- Reduce system maintenance

How do I use this eBook?



The Resources You Need for More Business Security Are Just a Click Away

Intuvo gives you new perspectives on handling difficult sample matrices, maintaining the integrity of important data and meeting user training requirements. Simply select one of the following topics to instantly access infographics, application notes, and more.

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How does Intuvo fit Agilent's intelligent GC product family?



Intuvo is part of a new line of GC devices from Agilent that are not only intelligent but also provide valuable insights. The new devices offer more than just capturing system information – they help you increase productivity, minimize downtime and increase efficiency. This allows you to spend more time on important tasks. Intelligent GC systems from Agilent work as hard as you and offer the following functions:

Browser interface

Allows remote access to key GC features no matter where you are.

Intelligent accessories

With the automatic configuration of the flow path components and column dimensions, you save time and avoid guesswork – with the same diagnostic information, such as e.g. the column age.

Integrated maintenance tasks

Automatic loading of maintenance methods with step-by-step guidance and implementation of automated diagnostics (e.g. B. Check for leakage and restrictions) after completion of maintenance.

Diagnostics and performance verification

Automatic and operator-initiated diagnostics improves the system state and gives you security by simultaneously monitoring critical chromatography properties and detector signals.

Preventive maintenance reporting system

Logging the use and receipt of maintenance alerts to plan preventive maintenance and reduce downtime.

The intelligent GC family from Agilent



9000 GC Agilent 8860 GC Agilent 8890 GC

What distinguishes Intuvo from traditional GC systems?



By optimizing installation, configuration, operation and maintenance, Intuvo transforms the GC. The system has built-in functions not found in any other GC system, enabling rapid chromatography and being used wherever routine high sample throughput GC analyses are performed.



Intelligent

No more hardware errors thanks to self-diagnostics, real-time feedback and the unique smart key flow path.

Energy efficient

Cuts electricity consumption in half with intelligent energy management and a directly heated flow path. Together with the fast analysis times, you can drastically reduce your costs per sample.

Controls

Thanks to the Agilent OpenLab and MassHunter software, you always have control over your analytics. Do you already have a client server? No problem! Intuvo can be used with all major chromatography data system platforms.

Ultrafast

Increase your productivity with directly heated columns, consistent temperature control, and fast heating and cooling. Thanks to direct heating without an air bath oven, Intuvo is inherently safe for hydrogen as a carrier gas.

Self-awareness

Worried about leakage? Not sure if the detector needs to be replaced? Intuvo informs you and supports you in the implementation of critical procedures.

Intuitive

An interactive user interface simplifies device control, data generation, status monitoring and maintenance.



You want optimal control over your Agilent devices?

With OpenLab CDS you can take advantage of all the modern functions that

Our state-of-the-art chromatographs are available.

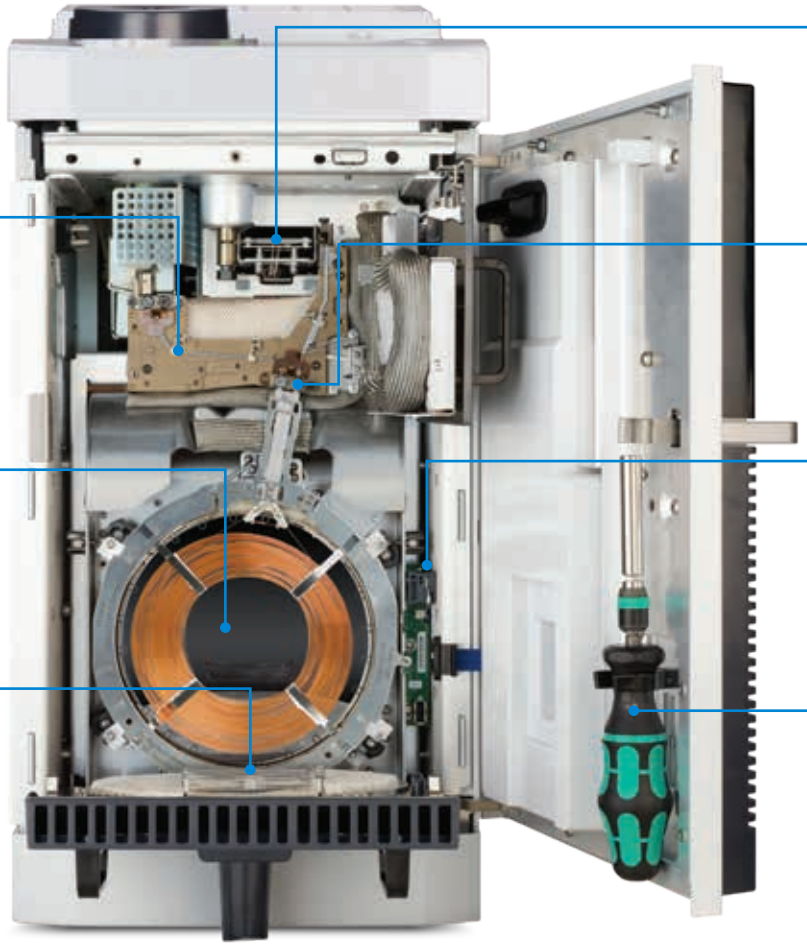
OpenLab CDS offers a user interface according to modern standards

Software to instantly create a sense of familiarity and trust.

More entrepreneurial security, directly integrated



Unscheduled downtime, time-consuming work steps and user-related technical constraints – all of these have an impact on the speed of your lab's data delivery and on business outcome. Intuvo offers innovations for these challenges that will inspire you from the very first minute.



Inert flow path

An inert flow pathway is critical for accurate, reproducible analyses of active analytes. The inert flow path components of the Intuvo provide consistent inertness from the injector to the detector.

Direct heating

The planar column design enables direct contact thermal conduction, eliminating the need to use large conventional furnaces.

Shorter cycle times

Directly heated columns, consistent temperature control and fast heating and cooling save you valuable time. Thanks to direct heating without an air bath oven, Intuvo can also be safely used with hydrogen as a carrier gas.

No more shortening of pillars

Easy-to-install guard chips for single use enable an almost one metre long sample flow path directly in front of the Intuvo GC pillar.

Fast, reliable column change

Intuvo uses ferrule-free surface seals for all fittings in the gas flow path – making it easy to maintain the integrity of the flow path.

Smart keys

By automatically configuring the right flow path components and column dimensions with the help of Intuvo Smart Keys, you save time and avoid guesswork – with the same diagnostic information, e.g. the column age.

Ferrulene-free click-and-run compounds

No more guesswork in creating tight connections. With just one "click" you can create a leakage-free seal in under a minute.

What makes Intuvo so unique?

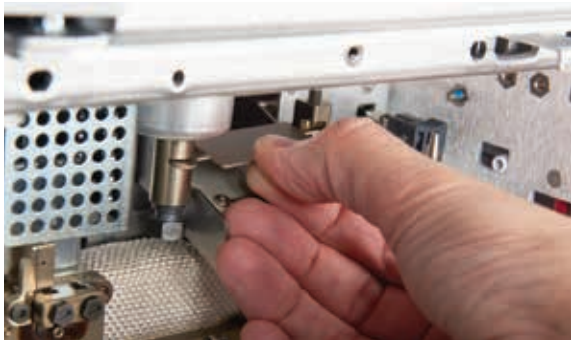


Like all Agilent GC systems, Intuvo is based on the company's tradition of robust, highest quality and excellent performance. Intuvo extends this legacy by introducing technologies: fast direct heating, ferrule-free fittings, guard chip retention gap technology and columns that no longer need to be shortened.



Stop the wait by direct heating

Conventional GC systems use a convection air bath furnace. Intuvo, on the other hand, uses direct conduction heating, in which the temperatures for the entire flow path and column are programmed. Direct heating uses only half as much energy as a conventional stove, requires only about half the floor space and offers faster heating and cooling. So you can improve your throughput.



Avoid leakage and downtime by using click-and-run connections

Are you tired of the ferrules used in conventional gas chromatographs? Intuvo uses direct surface sealing connections that give you an audible and palpable "click" as feedback once the correct connection has been made. This means that leakages due to improperly adapted ferrules no longer occur and unplanned downtime and interruptions in operation are reduced.



No more shortening and longer service life of the column

Intuvo was designed with a single-use guard chip that acts as a pre-column retention gap. The guard chip prevents unwanted material from depositing on the column head and damaging it. And best of all, there is no need to shorten the pillar, which improves your productivity.

The Most Intuitive GC Accessory Ever



By eliminating functional limitations, Intuvo paves the way for a new way of thinking about workflows and outcomes. But that's not all. This accessory makes Intuvo one of the most efficient and cost-effective GC systems with the lowest purchase and operating costs.



Smart-key pillars

Intuvo detects the diameter, length and maximum temperature of each column, so you can trust your method and results.

Smart Key Flow Chips

How to set up flow splitting or midpoint backflush? Intuvo knows the answer – and thanks to smart key flow chips, mistakes are a thing of the past.

Gas Clean Filter

It is now easy to deliver pure gases and reduce the risk of column damage, loss of sensitivity and downtime. Intelligent sensors inform the Intuvo system when your gas filter needs to be changed.

Catalogue

Download our catalogue for more

learn about Intuvo pillars and accessories.



How does Intuvo change the way GC users work?



With Intuvo, you have access to functions that were previously reserved only for specialists. Intuvo also minimizes the time required for routine tasks and device maintenance – a ubiquitous problem for GC users.



Time savings

– The direct heating of the Intuvo is fast and reduces the cycle time of the sample.

– Changing an Intuvo column goes 10 times faster.

– Because the column shortening and thus also the Recalibration and requalification are eliminated, the operating time increases.



Solving the error search puzzle

Intuvo automatically measures several important device parameters and creates highly developed status reports.

Intuvo puts your device in the optimal operating state and keeps it there, regardless of the qualifications of the user.

– Leaks and improper installations
It is a thing of the past, because no more ferrules and no shortening of the pillar are necessary.



Improvement of operations

With Intuvo you can achieve sustainable operational improvements, e.g. B.:

– Delivery of results on time

Number of priority samples

– Cost per billable sample

Resource and asset management

Want to know more about Intuvo? See how the Intuvo 9000 allows you to add gas sample analyses to your workflows, increase sample throughput, and increase productivity with ultra-fast GC. Click here to view the webinars.



What does “return on innovation” mean?

The savings and efficiency gains that affect all areas of your GC lab, get new perspectives with Intuvo as you Increase your business scope, profitability maximize and minimize costs.

One of the biggest advantages of Intuvo is the reduction operational uncertainty due to unplanned Downtime. Delivery more consistent and better predictable results – especially between Operators and premises – can with the The most important return on investment of an Intuvo.

On the following pages you can see how the Transformative innovations from Intuvo in comparison compared to conventional GC systems Provide a better return on innovation.

Leakage-free connections



Tasks

Leaks due to faulty GC connections are a major reason for unplanned downtime and loss of productivity.

Innovation

Intuvo does not need nuts and ferrules for the river route connections. Instead, direct click-and-run connections are used. The audible and palpable “click” serves as confirmation for operators that they have successfully established a leakage-free connection, while automatic leakage detection provides continuous protection.

Savings

With an assumed 8 leakages per year, up to 24 hours of downtime can be avoided.


Improving Return on Innovation in Gas Chromatography
Incremental Economic Value of the Agilent Intuvo 9000 GC System
White Paper

Do you need more evidence?

Download our whitepaper

Problem

Every quarter, 6 to 8 hours are spent on troubleshooting and fixing river leakages.

= Duration of at least 72 samples per year

Unplanned downtime due to leakages due to faulty connections at the GC is an important cause of productivity losses in many laboratories.

Return on innovation

Ensure that a leakage-free connection is established and that downtime is avoided

= Approximately $9000 in additional sales annually

It is crucial that a laboratory can deliver reliable results day after day and plan its workflow without interruptions.

Even if sales are subject to a 20% profit margin, the lab could make an additional $1800 profit annually.

Fast heating and cooling



Tasks

In the GC laboratory, every minute is precious. Forensic laboratories need fast results to support criminal cases. Service laboratories may charge surcharges for faster analyses. QA laboratories must maintain the production flow.

Innovation

Intuvo uses direct heating and cooling so that columns are heated up to 250 degrees per minute and cool down up to two minutes faster. At the same time, the power consumption, the space requirement and the load on the air conditioning system are halved.

Savings

With just one extra sample per day, your sales could increase by as much as $30,000 per year.



Improving Return on Innovation in Gas Chromatography
Incremental Economic Value of the Agilent Intuvo 9000 GC System

White Paper

Author

Introduction

Do you need more evidence?

Download our whitepaper

Problem

Use of a conventional air bath oven in routine use

= Longer time until the result

For many GC laboratories, minutes are already precious, as the demand for higher GC productivity is constantly increasing in a limited laboratory space.

Return on innovation

Direct heating significantly increases the heating and cooling rate and thus shortens the cycle time

Plums

= At least 250 additional samples could be measured

It is crucial that a laboratory can deliver reliable results day after day and plan its workflow without interruptions.

The analysis of 250 additional samples per year could be a Revenue increase of $31,250 annually.

No more shortening of pillars



Tasks

The shortening of capillary columns for the removal of sample matrix contaminations is a time-consuming task which, if not carried out correctly, can also lead to downtime. Over time, the shortening also deteriorates the column performance and the change in the column length necessitates recalibration.

Innovation

In the case of the Intuvo, shortening is eliminated by inserting a guard chip for disposable use between inlet and column. The guard chip serves as a retention gap and prevents high molecular weight material from depositing on the column. In addition, the guard chip can be changed within five minutes, while shortening and re-installing a conventional pillar takes 30 minutes. The best part is that the column length does not change and the retention time does not shift.

Savings

In a typical food or environmental analysis laboratory, eliminating column cuts could save about $7,500 per year, while reducing recalibrations could save over $9,000.

Problem

Capillary columns must be shortened frequently



= **Unplanned Downtime**

Column shortening can lead to a significant loss of time, especially in the case of improper performance, which could be used to analyse further samples and increase the efficiency of the laboratory.

Return on innovation

Use of a guard chip for single use in front of the capillary column



= 6 times less maintenance

This would correspond to 125 samples per year, which could be analyzed in addition – and at a price of 125 $ per sample, an annual net sales of 7625 $.

The Guard Chip could also extend the life of the analysis column by up to 2 weeks, resulting in a Additional income of about $9375 per year would result.

Intuvo applications



Here, Intuvo demonstrates its value through a new approach and previously unavailable approaches to tackling daily challenges. These application notes show you how.



Foodstuff testing

- Dioxins Analysis in Food and Feed by Intuvo 9000/7010 GC-QQQ System
- Fast Analysis of Pesticide Residues in Food Samples Using GC/MS/MS
- Rapid separation of Fatty Acid Methyl Esters Using DB-FastFAME Intuvo GC Columns
- Multiresidue Pesticide Analysis: Improving Peak Shape Consistency



Environmental analysis

- Analysis of semivolatile organic substances with the gas chromatograph Agilent Intuvo 9000
- Reducing Analysis Time of 8270D with the Intuvo 9000 GC
- Analysis of organochloropesticides with an Agilent Intuvo 9000 dual ECD GC system
- Increased Reproducibility in the Analysis of EU and EPA PAHs with the Agilent J&W Select PAH GC Column and Agilent Intuvo 9000 GC

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Analysis of flavourings, fragrances and chemicals

- Quality Control of Fragrance Samples by GC-FID: Method Transfer from the Agilent 7890 GC to the Agilent Intuvo 9000 GC
- Characterization of Flavouring Substances and Fragrances in Complex Matrices with Linear Retention Indices without Sample Preparation



Hydrocarbon analysis

- Analysis of Total Petroleum Hydrocarbons in Environmental Samples Using Ultra-Fast Gas Chromatography
- Analysis of light hydrocarbons on the Agilent Intuvo 9000 GC with a gas sample valve
- Ultrafast simulated distillation of middle distillates according to the ASTM method D7798 on the Agilent Intuvo gas chromatograph
- Sulphur in Gasoline: Light Petroleum Liquids According to ASTM D5623

Intuvo applications



Here, Intuvo demonstrates its value through a new approach and previously unavailable approaches to tackling daily challenges. These application notes show you how.



Pharmaceutical analysis

- Extractables and Leachables: A Complex Analysis
- Analysis of residual solvents with an Agilent Intuvo 9000 GC system



Forensic analysis

- Determination of Blood Alcohol with Dual Column/Dual FID and the Agilent Intuvo 9000 GC

For forensic purposes

Intuvo in action



Just press Play to learn more about the technology behind Intuvo and learn how laboratories maximize their return on innovation.



The Intuvo story

See how the transformative power of Intuvo drives greater analytical and business success (in English).



The Importance of Innovation

with Lee Polite, Axion (in English).



Increased productivity in pesticide analysis

with Amadeo Fernandez-Alba, European Reference Laboratory for Pesticides in Fruits and Vegetables.



Use of the Agilent Intuvo GC 9000 in an environmental research laboratory

with Johnny Mitchell, ESC Laboratories (in English).

Intuvo is fast, intelligent, stable and improves business results



Discover how the innovative Intuvo 9000 gas chromatography system pays off in an unexpected way in terms of your ROI. Just press Play to learn more about the technology behind Intuvo.



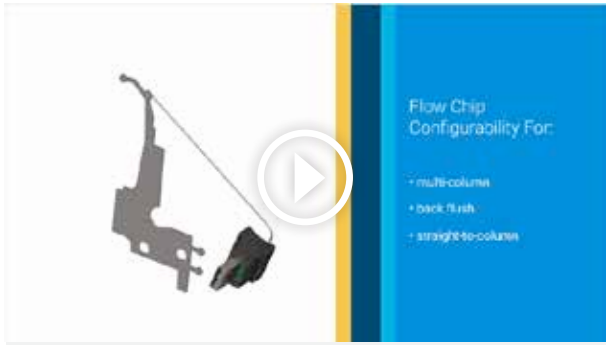
The Agilent Intuvo 9000 GC system is fast.



The Agilent Intuvo 9000 GC system is intelligent.



The Agilent Intuvo 9000 GC system is robust.



The Agilent Intuvo 9000 GC system improves business results.

Agilent CrossLab Services

CrossLab integrates services and consumables that support the success of workflows and deliver important results such as improved productivity and operational efficiency. With CrossLab, Agilent strives to provide insights in every interaction that help you achieve your goals faster and better. CrossLab services include method optimization, flexible service plans and training for all skill levels. We offer many more products and services to help you get your equipment and lab to perform at its best.

Learn more about Agilent CrossLab and see how insights lead to optimal results:
www.agilent.com/crosslab

Agilent CrossLab
From Insight to Outcome

More info:
www.agilent.com/chem/gc

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