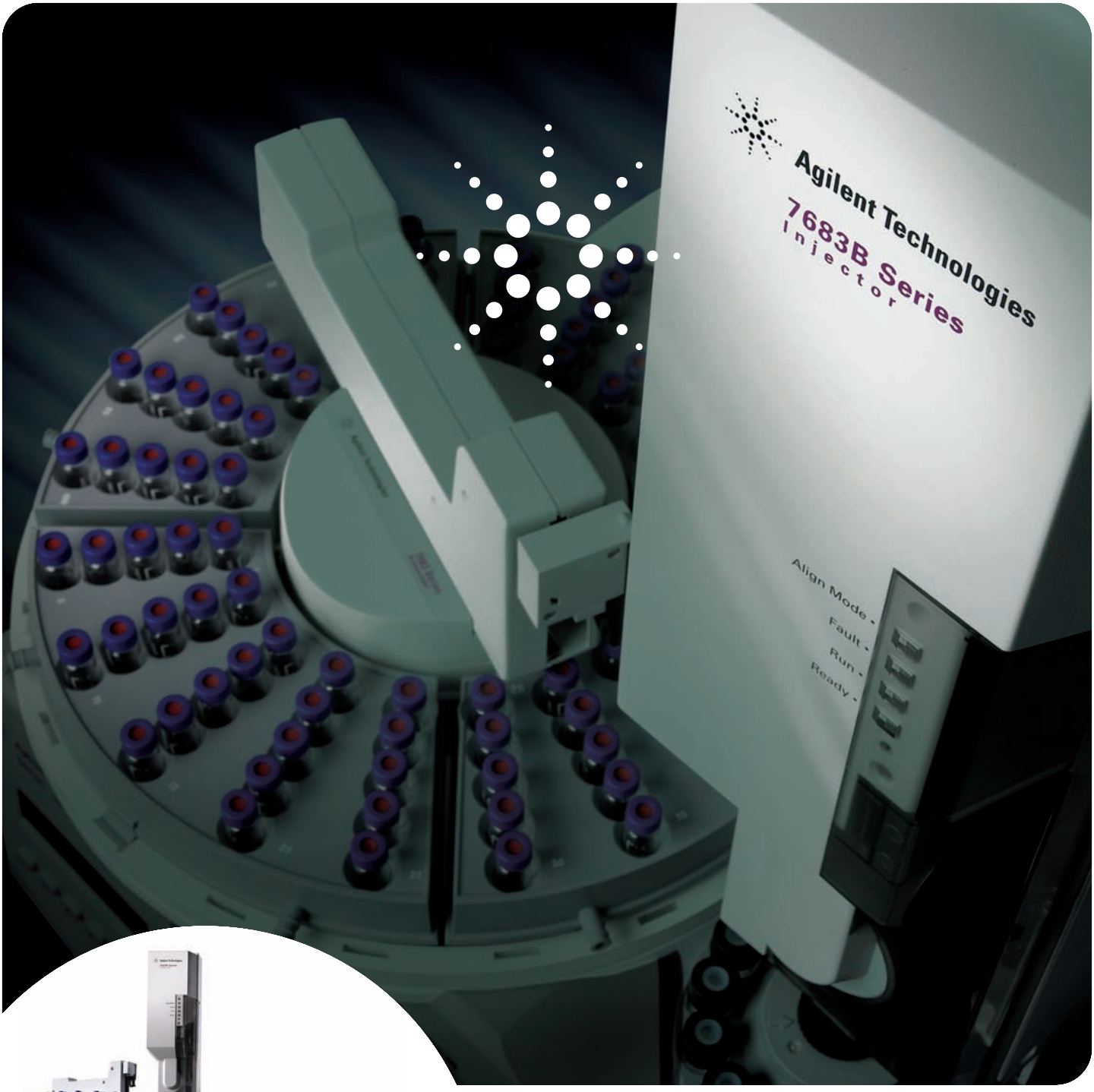


Agilent 7683B Automatic Liquid Sampler

Productivity, Flexibility and Confidence

Our measure is your success.

Productivity. Flexibility. Confidence.

You can count on the 7683B ALS for accurate, reliable results.

From conducting high-volume drug screenings... to analyzing pesticides in fruit... the bottom line is results. And Agilent's **7683B Autosampler** takes the quality of your results to a higher level with the industry's most precise measurements and injection volumes.

But that's only part of the story. The 7683B also features a modular design that permits easy inlet maintenance and fast, cost-effective service. So you can increase instrument uptime and run the maximum number of samples possible.

From small-volume injection, to large-volume injection, to multi-phase sampling, the 7683B can help you obtain better data, process samples more quickly, and produce defensible results.

The Agilent 7683B ALS is designed to work seamlessly with **Agilent's 7890A, 6890N,** and **6890 Plus** GCs. Its injector tray and bar code reader can be connected without the need for a controller box – or multiple power cords and outlets.

Packed with features, the 7683B ALS raises the standard for GC system performance.

This next-generation automatic liquid sampler (ALS) for the Agilent 7890A and 6890N network GC offers all the features of our popular Agilent 7673A ALS and more – including:

- **Priority sampling** – interrupts automated runs for maximum flexibility.
- **Next sample overlap** – saves you time when the autosampler is combined with a 7890A and controlled using GC ChemStation, MSD ChemStation, EZChrom Elite or OpenLAB.
- **Greater solvent capacity** – increases uptime and hours of unattended operation.
- **Dual simultaneous injection** – improves sample throughput.
- **Plug-and-play design** – allows fast, easy transfer between instruments with no realignment.

Plus, Agilent's exclusive fast-injection technology minimizes needle discrimination and sample degradation caused by contact with a hot metal needle. It also ensures the best possible peak shape, so you can keep your analysis simple while maximizing the accuracy of your results. Only Agilent can offer you this technology!

Brochure Highlights

Fast, easy sampler installation
The lightweight, self-aligning 7683B ALS mounts in seconds. And its modular design takes the hassle out of routine maintenance.
page 4

Longer unattended operation
Now you can double your solvent and solvent waste capacity – and quadruple solvent wash capacity – for extended periods of unattended operation.
page 4

Sampling flexibility
Allows you to use partially filled vials of different shapes and capacities.
page 5

The fastest injection speed in the industry
Agilent's 7683B ALS is five times faster than other ALS products on the market – minimizing needle discrimination.
page 6

Precision measurement
Only the 7683B ALS can inject directly into smaller inner diameter columns, eliminating the need for special adapters or larger diameter columns.
page 6

Parts and supplies
They may be small, but Agilent parts and supplies play a big role in achieving consistent results and optimal system performance – all day, every day.
page 7

Dependable automation to enhance your productivity.

With features like dual simultaneous injection, "plug-and-play" installation, ChemStation control, and a large solvent capacity, the Agilent 7683B autosampler can help you run **more samples** in **less time**. And at a lower cost.

Furthermore, the 7683B is backed by **Agilent's Value Promise** – as well as our assurance that, should your sampler require factory maintenance, we will provide a temporary replacement to keep your downtime to a minimum.

Fast, easy sampler installation

The modular design of Agilent's 7683B ALS lets you move the autoinjector from one inlet to another, while allowing fast, easy transfer between GCs. It also permits easy inlet maintenance and fast, inexpensive repair, if necessary. Additionally, the lightweight, self-aligning injector mounts in seconds – with no tools needed. So your system can be up and running day and night, without the need for calibration or adjustment, keeping your productivity at its peak.

Maximum throughput

Agilent's exclusive dual simultaneous injection feature doubles sample throughput, saving you time and reducing your capital and maintenance costs.

Next sample overlap

When you combine the Agilent 7683B ALS with the 7890A GC, you can retrieve vials and perform syringe wash steps during the oven cool-down cycle, further increasing your productivity.

Increased periods of unattended operation

The new 7683B autoinjector design gives you twice the solvent and solvent waste capacity of its predecessor, the 7683A autoinjector.

You decide how much automation you need

The Agilent 7683B ALS system has a modular design, giving you flexibility you cannot get with a built-in automatic liquid sampler.

For example, you can use the same 7683B tray with either the 7683A or 7683B autoinjector. And you can use either (or both) autoinjectors for dual simultaneous injection on any Agilent 7890A, 6890, or 5890 Series GC system.

Gradual expansion as your needs change

You can start with an Agilent 7683B autoinjector with an eight-sample turret, then progress to a second injector, a 100-sample tray, and a bar code reader. The tray and mounting bracket are one assembly, allowing easy transfer to another GC when workloads change.

Total control at your fingertips

Options include the Agilent 7890A or 6890 keypad, the Agilent GC ChemStation, the Cerity Networked Data Systems, the Agilent MSD ChemStation, and an Agilent integrator.

To learn more about the unique features of Agilent's 7683B ALS, visit **www.agilent.com/chem**.
Or call toll free: 1 800 227 9770, option 1 (in the US and Canada).

Unprecedented flexibility to fit your changing workload.

Unlike built-in automatic liquid samplers, the 7683B ALS features a modular design that lets you determine how much automation you need. As your workload changes, you can move the autoinjector from one inlet to another – or transfer the sampler modules between GC systems.

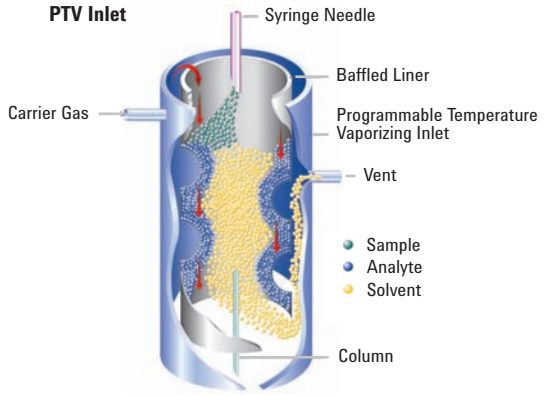
Sampling flexibility

Variable needle depths allow you to sample anywhere within the vial. When combined with the Agilent bar code reader/mixer, the Agilent 7683B ALS can also perform automated liquid/liquid extraction to minimize manual sample preparation.

Ambient Headspace Sampling | **Multi-Phase Sampling** | **Small-Volume Sampling**

Programmable Temperature Vaporizing (PTV): A flexible, robust technique

During PTV sampling, a high flow of carrier gas evaporates the solvent inside the cooled inlet liner, causing semi-volatile compounds to concentrate there. PTV is excellent for complex sample matrices and late eluters, especially when combined with variable speed and large volume injections. And it's particularly useful for trace analysis of pesticides and PAHs in food extracts, biological fluids, and wastewater extracts.



Your Problem:

How to achieve consistent results with large-volume injections.

Today's detection requirements can challenge even the most selective and sensitive gas chromatography (GC) detectors. And introducing larger volumes of sample into the GC column can cause severe band broadening, peak deformation, and damage to the column or detector.

Our Solution:

Agilent's 7683B automatic liquid sampler (ALS) – combined with our 7890A and 6890 GC systems – give you two reliable options for large-volume injections:

1. **Use a pressure pulse with your split/splitless inlet**, which allows you to increase your injection volume quickly – without additional equipment.
2. **Introduce larger samples (5 µL to 500 µL) with Agilent 7890A and 6890 GC systems configured for large-volume injection.*** This lets you push detection limits down by one or two orders of magnitude while improving sample throughput – and the quality of your results.

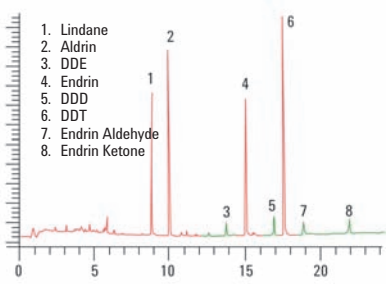
Keep in mind, too, that Agilent's new ALS controller interfaces the 7683B (and 7683A) systems to 6890A GCs. (6890A systems require an optional controller.)

* May require multiple injections.

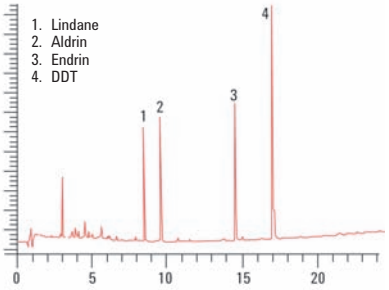
Unmatched precision

Automated direct cool on-column injection into 320-µm and 250-µm columns eliminates thermal degradation (peaks 3, 5, 7, and 8 in the upper chromatogram). Only Agilent offers the precision required to inject directly into such small inner diameter columns.

Organochlorine Pesticides with Splitless Injection



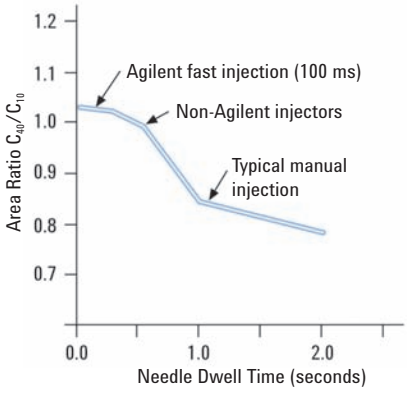
Organochlorine Pesticides with On-Column Injection



No needle discrimination

100-millisecond fast injection eliminates a major source of sample discrimination, ensuring that your injections are as representative of the sample as possible. Only Agilent offers you this capability.

Effect of Injection Speed on Discrimination



Agilent's patented injection technology gives you the confidence of precise results... faster than ever.

Whether you're detecting polynuclear aromatics in wastewater or testing drugs for purity, your results must be correct, precise, and irrefutable. And the 7683B ALS helps you meet these demands with leading-edge capabilities that are exclusive to Agilent.

Uncompromising precision that minimizes rework

The Agilent 7683B ALS allows you to use two wash solvents for pre- and post-injection needle rinsing, which reduces sample carryover.

And just to be sure... pre-injection sample washes further reduce the possibility of carryover, while pre-injection sample pumps ensure accurate injection volumes.

What's more, the 100-sample tray mounts away from the GC oven to prevent exposure of the samples to high temperatures and temperature cycles that can cause sample degradation or condensation in the vial. In addition, individual quadrants on the tray can be cooled to sub-ambient temperatures to protect sensitive samples even further.

An injection speed that is at least five times faster than the competition.

Agilent's exclusive fast injection technology minimizes needle discrimination and sample degradation from contact with a hot metal needle. It also ensures the best possible chromatographic peak shape. The result: you keep your analysis simple while maximizing the accuracy of your results with a feature only Agilent can offer.

Fast injection also simplifies quantitation by enabling the use of external standards. Additionally, a nanoliter injection mode lets you introduce a sample as small as 0.1 µL – a critical capability for fast GC when using 0.1 mm capillary columns.

Ensure a lifetime of peak performance from your 7683B ALS – and your entire GC system – with Agilent Certified Vials.

Agilent Certified Vials and caps are engineered with the same reliability you expect from Agilent instruments. And they are designed to work with your Agilent 7683B ALS. Choose from...

Vials:

- Screw, crimp, and snap-top vials and caps
- Amber for light-sensitive samples
- Silanized/deactivated for trace analysis, and for samples that can bind to glass
- Microvolume inserts for very small injection volumes
- High recovery for limited sample volumes
- New! Headspace screwtop 10 mL and 20 mL clear or amber vials

What's more, Agilent's uncompromising packaging standards prevent contamination that can increase background noise and decrease reproducibility.

Prevent wrist injury with our electronic crimper and decapper

- Reproducible, tight sealing
- Ideal for high-throughput labs
- 11 and 20 mm sizes

And remember... when you buy columns and supplies from Agilent, you get more than just products.

You also get over 40 years of GC, LC, and MS experience – plus technical expertise – that helps you get the reproducible results you need. On the web, by phone, or in person, Agilent can help you avoid problems and address any challenges you may face.

To order columns and supplies, visit **www.agilent.com/chem/store.**
Or call toll free: 1 800 227 9770, option 1
(in the US and Canada).

For more information

For more information about the Agilent 7683B Automatic Liquid Sampler or other Agilent products and services, visit us online or call toll free:

www.agilent.com/chem

1-800-227-9770 (in the US and Canada)

In other countries, please call your local Agilent Representative or Agilent Authorized Distributor.

Protecting your investment with the world's best service and support – guaranteed.

The Agilent 7683B Automatic Liquid Sampler is built for reliability. But if you ever need support, you can count on Agilent – the world's premier measurement company – to also deliver the world's premier service. Our factory-trained Service Engineers carry a supply of commonly used parts for immediate repairs, and they have instant access to Agilent's world-class parts logistics centers. They can even provide you with a temporary replacement sampler to minimize your downtime.

In addition, we are so confident in the quality of our service, that we offer the Agilent Service Guarantee: Should your Agilent analytical instrument require service while covered by an Agilent service agreement, we guarantee repair – or we will replace your instrument free.

The Agilent Value Promise: ten years of guaranteed performance.

At Agilent, we stand behind our systems to maximize your return on investment. That's why the Agilent 7683B ALS is backed by the Agilent Value Promise. This promise guarantees you at least ten years use of your 7683B system, from the date of purchase, or Agilent will credit you with the residual value of the system when you upgrade to a replacement model.

The Agilent 7683B automatic liquid sampler has been designed and manufactured under a quality system that has been registered to ISO 9001.

Information, descriptions, and specifications in this publication are subject to change without notice.

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