

# MONITOR QUALITY, UNIFORMITY AND CALORIC VALUE WITH CONFIDENCE

The Measure of Confidence



## Agilent Biofuel Analyzers

Global pressure to reduce our dependence on fossil fuels is driving the demand for quality alternative energy sources. To meet this demand, you must analyze and evaluate your product's changing physical properties and chemical composition at every stage of production. You must also assess the environmental impact of biomass harvesting, biofuel production, and final product consumption.

### Confidently characterize chemical conversions, monitor process efficiency, and validate quality immediately after installation

Agilent Biofuel Analyzers are based on Agilent's 7890B GC and 490 Micro GC systems. Each is factory pre-tested and pre-configured to deliver the mission-critical results you need, *fast*, while saving you precious start-up time.

Choose from standard configurations, as well as custom analyzers to meet *your* specific quality assurance requirements for milling, liquefaction, microbial fermentation, distillation, dehydration, wastewater treatment, and other critical processes.



### Agilent Biofuel Analyzers reflect industry standards and our stringent quality control process. Systems include:

#### Factory

- System setup and leak testing
- Instrument checkout
- Installation of appropriate column
- Factory-run checkout method using application checkout mix

#### Delivery

- Instrument manual and Application Note (or chromatogram) for running the method
- CD-ROM with method parameters and checkout data files for easy out-of-the-box operation
- Consumables included – no separate ordering required
- Easy consumables re-ordering information

#### Installation

- Duplicate factory checkout with checkout sample – onsite by factory-trained support engineer
- Optional application startup assistance



Agilent Technologies

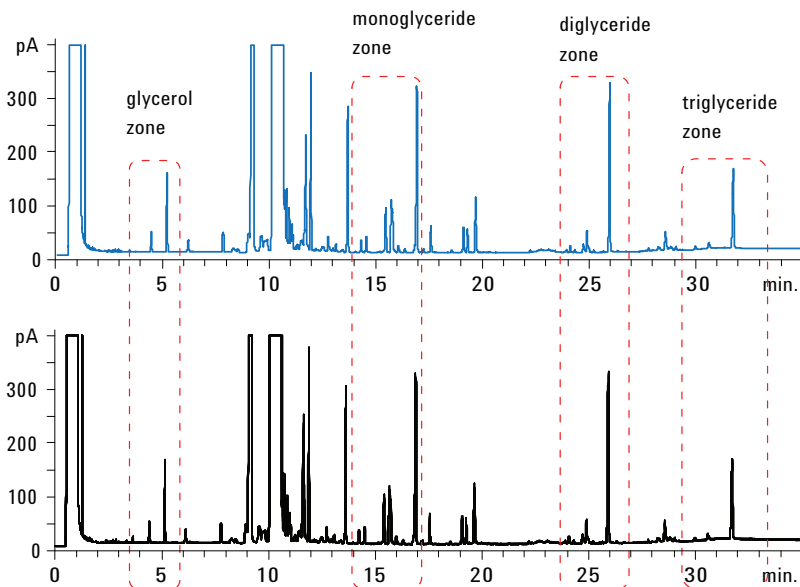
# Biodiesel and Fuel Ethanol Analyzers

for generating data about quality and uniformity

These “ready-to-go” systems allow your laboratory to quickly validate data, and conform to stringent regulations for FAMES analysis, glycerin and glyceride determination, and trace ethanol and methanol measurements in finished biofuels.

- **Analyzers are pre-configured and factory tested per a number of standard methods** – including ASTM D6584, D4815 and D5501, EN 14105, EN 14103, EN 14106, EN 14110 and EN 14331 – to ensure that your facility meets compliance and reporting criteria.
- **Each analyzer arrives ready to perform your specific application.** Systems include proven analysis methods and checkout samples that can reduce method development costs by up to 80%.
- **Required columns and supplies are included for “out-of-the-box” setup and operation,** so your laboratory can begin system calibration and performance validation *immediately following installation.*
- **Optional Deans Switch allows cost-effective, 2-D GC analysis of fuel oxygenates per EN 13132-2000.** Co-eluting compounds are separated from target analytes using a second column with a different stationary phase. This configuration conforms to the EN 13132-2000 method.

Part Number	Description	Configured per
G3445B#631	Glycerol and Glycerides in Biodiesel Analyzer	ASTM D6584
G3445B#634	Free and Total Glycerol in Biodiesel Analyzer	EN 14105-2011
G3445B#633	FAME Content in Biodiesel Analyzer	EN 14103-2011
7890-0295	Methanol in Biodiesel Analyzer	EN 14110-2003
7890-0307	FAME Content in Biodiesel Blends Analyzer	For biodiesel blends (Reference: EN 14331-2004)
G3445B#632	Five-in-One Biodiesel Analyzer	EN 14105-2003/ASTM D6584, EN 14103-2003, EN 14110-2003, EN 14106-2003
7890-0520	Fuel Ethanol Analyzer	ASTM D5501
G3445B#614	Oxygenates in Gasoline Analyzer	ASTM D4815
G3445B#617	Oxygenates in Gasoline Analyzer	EN 13132-2000



The **top** chromatogram depicts a single run of a B100 sample prepared using Agilent’s 7696A Sample Prep WorkBench. Each zone for glycerol and glycerides quantification is outlined in red. The **bottom** chromatogram overlays 10 separate samples prepared using the 7696A Sample Prep WorkBench.

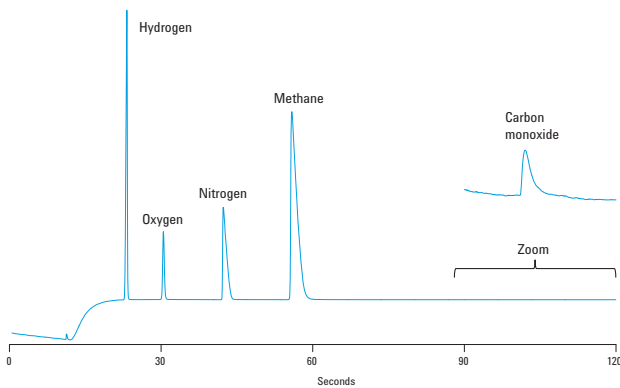
# Standard and Custom Biogas Analyzers

Biogas is produced through biological processes such as fermentation and digestion of organic materials; therefore, its composition relates directly to its organic material origin.

For example, caloric value depends upon hydrocarbon composition and CO<sub>2</sub> concentration. Understanding its composition allows you to determine how energy availability governs direct usage, or blends with other hydrocarbon streams to generate power.

Agilent Biogas Analyzers are designed to get your facility up and running quickly, and include final test data, analytical method parameters, and performance verification sample.

- **Optimized for your analytical needs:** Systems are configured and factory tested to meet your demands for laboratory and field analyses of biogas and related sample streams.
- **The analytical speed you need.** Changes in composition can affect biogas calorific value. Agilent Biogas Analyzers generate precise analysis in *seconds*, rather than minutes.
- **Pre-configuration and testing make start-up easy.** Biogas Analyzers ship fully loaded with method and supplies for “out-of-the-box” operation.
- **Fast delivery:** To help you meet urgent deadlines, Agilent Biogas Analyzers are shipped directly from stock.



**Precise gas analysis saves money and adds value.** From research to production, Agilent Biogas Analyzers deliver reliable data in a matter of seconds.

Part Number	Description	Configured per
G3582A#110	Agilent 490 Micro GC Biogas Analyzer	Channel 1: Permanent gases Channel 2: CO <sub>2</sub> , H <sub>2</sub> S and C2-C3
G3582A#111	Agilent 490 Micro GC Biogas Extended	Channel 1: Permanent gases Channel 2: CO <sub>2</sub> , H <sub>2</sub> S and C2-C3 Channel 3: C4-C7 Hydrocarbons

## Agilent FTIR Systems

Reliable, on-site analysis of materials and finished products

Fourier-transform infrared spectroscopy (FTIR) is ideal for identifying unknown materials, because it can analyze functional groups and produce a unique spectroscopic “fingerprint.” This capability is especially useful for verifying blend quality and biodiesel content.

Agilent’s portable 4500 and 5500 FTIR Biodiesel Analyzers allow you to reliably measure key parameters in the lab or in the field. Each arrives ready to use with methods for determining:

- Biodiesel concentration in diesel fuel
- Mixing and contamination levels
- Diesel fuel quality and contamination (including ASTM D7371-01 and EN 14078)

Agilent 4500 Series Portable FTIR Spectrometer



Agilent 5500 Series FTIR Spectrometers

## Agilent has the technology and experience to support your lab with fully customized solutions

For over 40 years, Agilent has taken an active role in developing methods and applications – many of which have evolved into global standards for energy/fuels analysis.

Our 7890 GC, for example, is the world's most widely used industry-standard GC system. It features accurate temperature controls and precise injection systems – plus fifth-generation Electronic Pneumatic Control (EPC) for the best retention times.

In addition, Agilent experts continue to be actively involved in ASTM – the world's most trusted source for standards development. We have applied this deep regulatory understanding toward developing methods for our Biofuel Analyzers.

### **Beyond the box: A full portfolio of customized products, advice, and support**

#### **High-quality columns and supplies from the world GC leader**

Agilent-engineered GC columns and supplies deliver what your alternative energy applications demand – including:

- Long-term reliability and robustness
- Trouble-free instrument operation
- Faster analysis *without* loss of resolution

#### **Local, on-site assistance**

No matter where you are on the energy/fuels supply chain, Agilent can help you increase production efficiency and enhance product quality.

**Best-in-class service and support:** Whether you need support for a single instrument or a large-scale, multi-vendor operation, Agilent service professionals can help you solve problems quickly and increase your uptime – so you can focus on what *you* do best.

**Custom GC and GC/MS configurations:** Let Agilent customize a standard GC or a GC/MS Analyzer with specialized columns, valves, tubing inlets, and other add-ons – including an extensive line of consumables and column modules.



# GO.

Put your applications on the *fast track*

Contact your local Agilent Representative or Agilent Authorized Distributor at [www.agilent.com/chem/contactus](http://www.agilent.com/chem/contactus)

Or call **800-227-9770** (in the U.S. or Canada)

Visit [www.agilent.com/chem/appkits](http://www.agilent.com/chem/appkits) for a description of available Analyzers and Application Kits

### **Ordering information:**

Consult with your Agilent Account Manager or visit [www.agilent.com/chem](http://www.agilent.com/chem)

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