

All In One AC Biodiesel Analyzer determines the quality of Fatty Acid Methyl Esters (FAME) blending stock for Diesel Fuel

Product Brief



INTRODUCTION

In the last decade there has been a worldwide growth in the interest for alternative fuels. Biodiesel, Fatty Acid Methyl Esters known as FAMES, offers an alternative to fossil diesel fuel and contributes to the reduction of greenhouse gas emissions.

Globally, public authorities promote the use of blends of biofuel and conventional fuel through directives and by setting ambitious goals. Standardization bodies, such as ASTM and CEN, have already published methods that outline specifications for biodiesel as blending component and test methods are available to determine the quality of the biodiesel.

BIODIESEL ANALYSIS

AC Analytical Controls developed an **all in one** biodiesel analyzer covering all the current chromatographic tests listed in the specification methods:

- EN 14103
- EN 14105
- EN 14106
- EN 14110
- ASTM D 6584

ALL IN ONE SOLUTION

The **all in one** AC Biodiesel application combines all ASTM & EN chromatographic tests listed in Biodiesel specification methods in a single Agilent Technologies 7890A GC.

Without changing the hardware the operator is able to select any of the ASTM or EN methods to perform the biodiesel analysis.

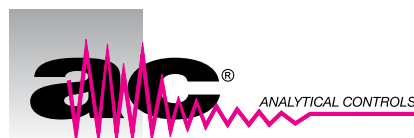
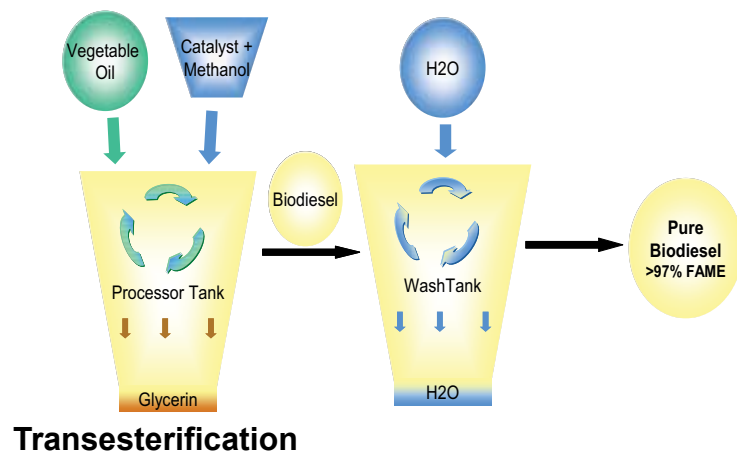


All In One Biodiesel Solution Analysis Methods			
Methods	Analysis	Inlet	Analysis Time
ASTM D 6584	Free & total glycerin	On-column (TPI)	35 minutes
EN 14103	Ester and linolenic acid methyl ester content	Split/splitless	25 minutes
EN 14105	Free & total glycerol, mono-, di- and triglyceride content	On-column (TPI)	35 minutes
EN 14106	Free glycerol	Split/splitless	10 minutes
EN 14110	Methanol content	Split/splitless	10 minutes

BIODIESEL

Fatty Acid Methyl Esters (FAME) are produced during a transesterification process, where organically derived oils are combined with methanol and chemically modified. FAME can be blended with petroleum diesel (mostly 5% = B5) or used as pure biodiesel (B100).

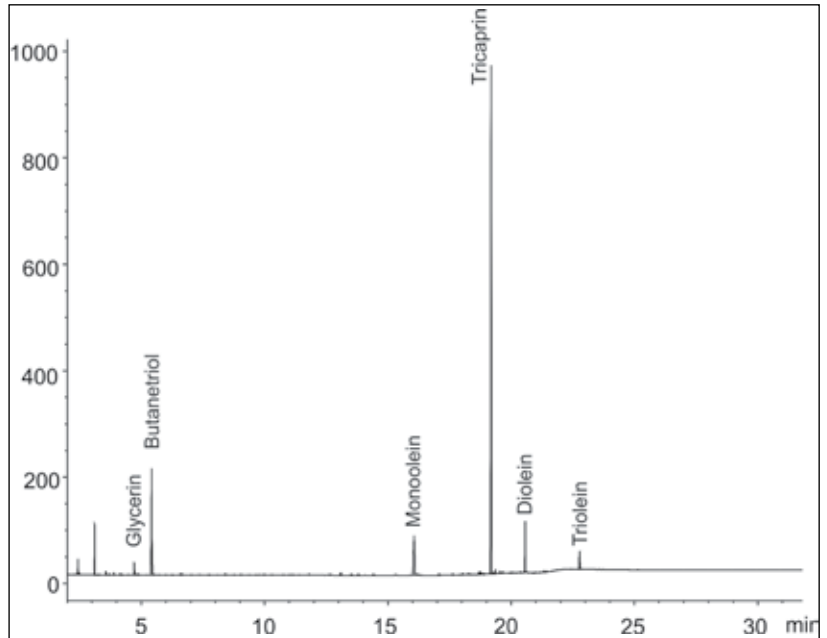
FAME as blending component needs to comply with EN 14214 or ASTM D 6751 specification methods.



SYSTEM DESCRIPTION

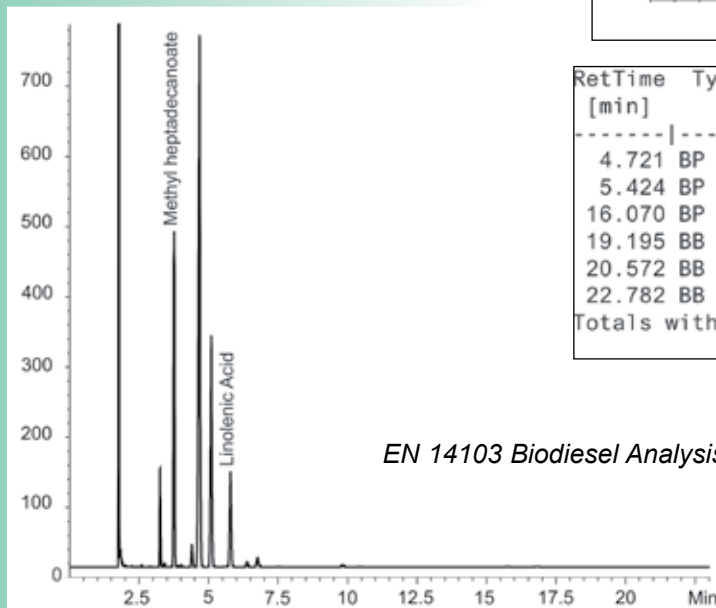
The **all in one** AC Biodiesel System uses the new Agilent Technologies 7890A gas chromatograph equipped with:

- two capillary columns
- Electronic Pneumatics Controls (EPC) for setting flow and pressure parameters
- one split/splitless inlet
- one on-column inlet (TPI)
- one additional column oven module
- two Flame Ionization Detectors (FID)
- optional Automatic Liquid Sampler
- optional Headspace Sampler



RetTime [min]	Type	Area [pA*s]	Amt/Area ratio	Amount [gram]	Grp	Name
4.721	BP	31.36043	6.13875e-1	5.60670e-6		Glycerin
5.424	BP	312.46085	1.00000	9.10000e-5		Butanetriol
16.070	BP	230.62206	7.26581e-1	9.89843e-5		Monoolein
19.195	BB	1354.28125	1.00000	8.00000e-4		Tricaprin
20.572	BB	108.37233	7.87658e-1	5.04240e-5		Diolein
22.782	BB	71.74427	1.29723	5.49775e-5		triolein
Totals without ISTD(s) :				2.09992e-4		

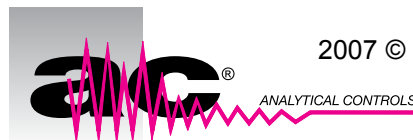
ASTM D 6584 Biodiesel Analysis



EN 14103 Biodiesel Analysis

FEATURES & BENEFITS

- ✓ **All In One** application combines all current chromatographic ASTM & EN methods in one GC
- ✓ Complies with EN 14214 and ASTM D 6751 biodiesel specifications
- ✓ Software is compatible with various chromatographic data systems such as Atlas, ChemStation and EZchrom
- ✓ Completely tested and calibrated according to specified methods
- ✓ Includes multiple sets of calibration components, internal standards and reagents
- ✓ Qualified support engineer installs the system on-site and familiarizes users with operation
- ✓ One year warranty covers hardware and application
- ✓ Analyzers include free helpdesk assistance for any hardware or software related questions
- ✓ Optional on-line remote support by LAN connection is available



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