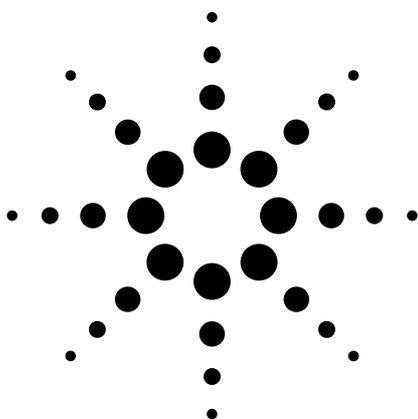




Analysis of Reformulated Gasoline



**Turnkey configurations for
gas chromatographic
analysis, including
instrumentation, methods,
supplies and service.**



Agilent Technologies

Innovating the HP Way



Agilent Technologies' analyzers for the hydrocarbon processing industry incorporate our extensive industry expertise in creating application-specific measurement solutions, based on standard or custom configurations of gas chromatographs, supplies, and methods, complemented by the specific knowledge of our channel partners.

Analyzers based on gas chromatography are the heart of any refinery lab. They support the production of reformulated gasoline, providing valuable information regarding operations, optimization, and finished products. These analyzers often carry the heaviest sample loads because of the critical information they produce.

Important benefits ensured by our systems include:

- Reliability
- Speed of analysis
- Resolution between components of interest
- System flexibility
- Guaranteed turnkey operation

Agilent Technologies analyzers for reformulated gasoline are based on the 6890 gas chromatograph, with standard or customized subsystems and software optimized for this application. We have broad expertise in these analyses, and extensive experience in valved gas chromatography, with standard and customized configurations. Our capability is complemented by the industry-specific experience of our partner, Wasson-ECE, Inc. All systems use Windows®-based software, with full data handling capabilities to facilitate communication within laboratory and plant-wide data systems.

Analysis Examples

This booklet contains some examples of specific analyzer configurations. Many more are possible, including the one that will fit your particular analytical needs.

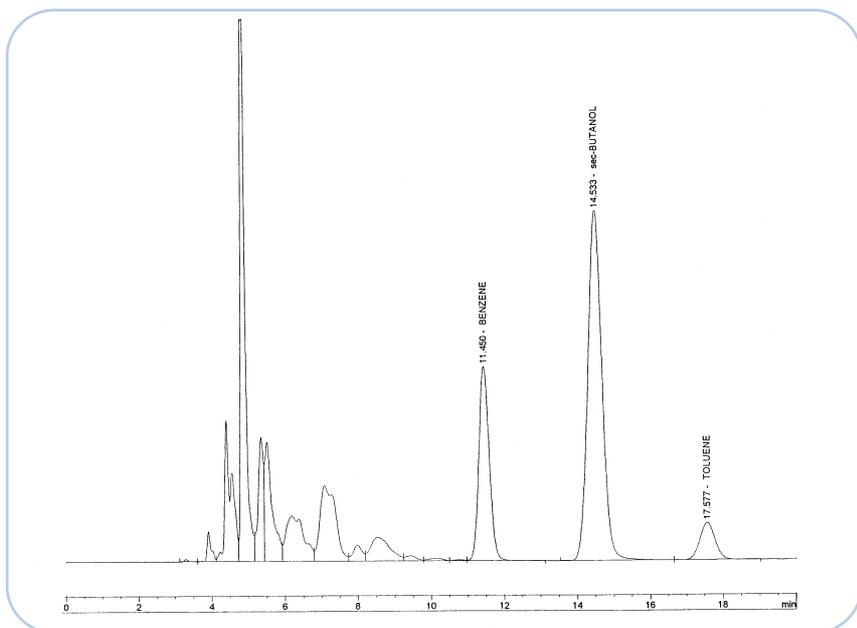


Benzene and Toluene in Motor Fuels

Application 159-00

System Highlights

- Conforms to ASTM method D3606 to monitor the concentrations of benzene (at 0.1% to 5%) and toluene (at 2% to 20%) in motor fuels and aviation gasoline
- Conforms to US EPA Method TP-116
- Can be combined with other reformulated fuels analysis on a single 6890 gas chromatograph
- Utilizes a second column set, developed by Wasson-ECE, that eliminates the co-elution problem that exists between oxygenates and aromatics on the traditional D3606 configuration
- Column 1 retains C₉ and heavier components which are backflushed to vent; Column 2 separates benzene and toluene for detection by the TCD
- Analysis time 15-20 minutes





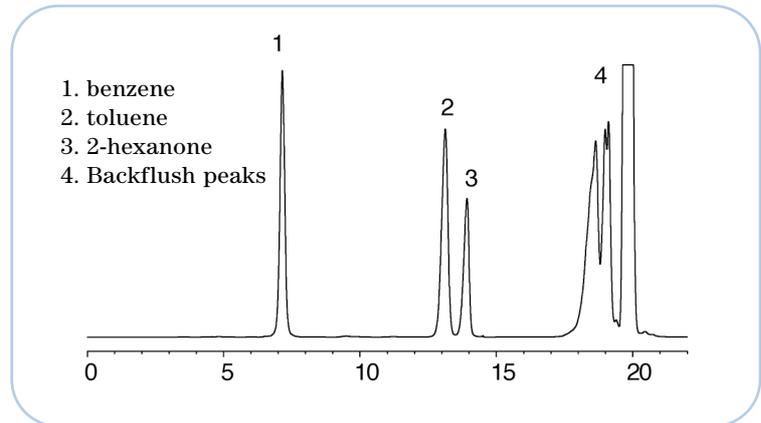
ASTM D5580 Aromatics in Gasoline

Application 252-00

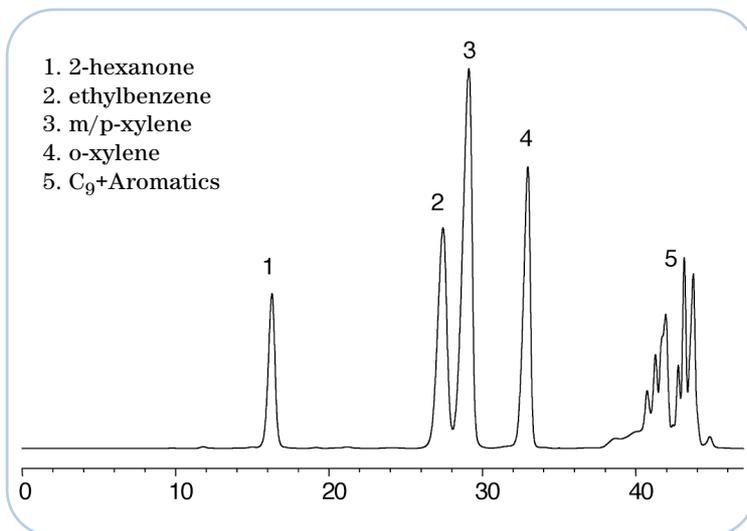
System Highlights

- Determines benzene, toluene, ethyl benzene, p/m-xylene, C₉ and heavier aromatics, and total aromatics in finished gasoline
- Custom isothermal auxiliary oven allows greater flexibility and capabilities
- Analysis time 46 minutes
- Conforms to ASTM Method D5880
- Can be combined with other reformulated fuels analysis on a single 6890 gas chromatograph

ASTM D-5580 Analysis of Aromatics in Gasoline —Method A-Application 252-00



ASTM D-5580 Analysis of Aromatics in Gasoline —Method B-Application 252-00





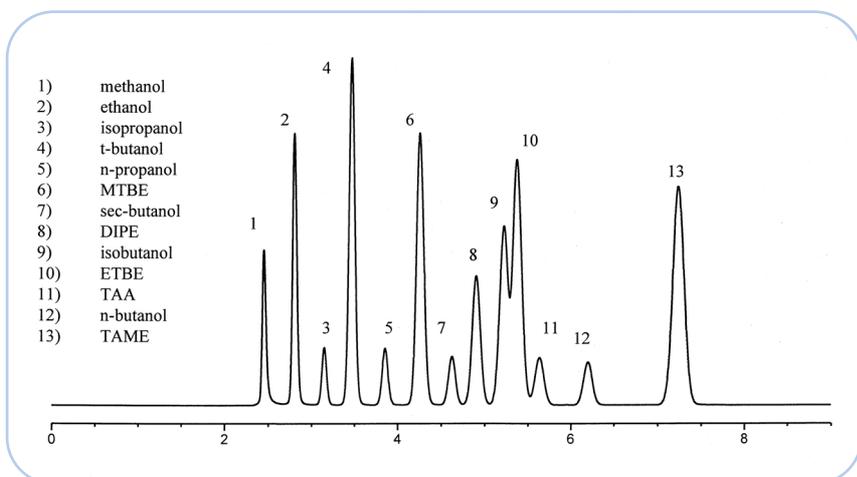
ASTM D4815 Ethers and Alcohols in Gasoline

Application 250-00

System Highlights

- Analyzes ethers (at 0.1% to 20%) and alcohols at (0.1% to 12%) in gasoline
- Custom isothermal auxiliary oven provides flexibility and capability
- Analysis cycle time 20 minutes
- Conforms to ASTM Method D4815
- Can be combined with other reformulated fuels analysis on a single 6890 gas chromatograph

ASTM D-4815 Oxygenates in Gasoline





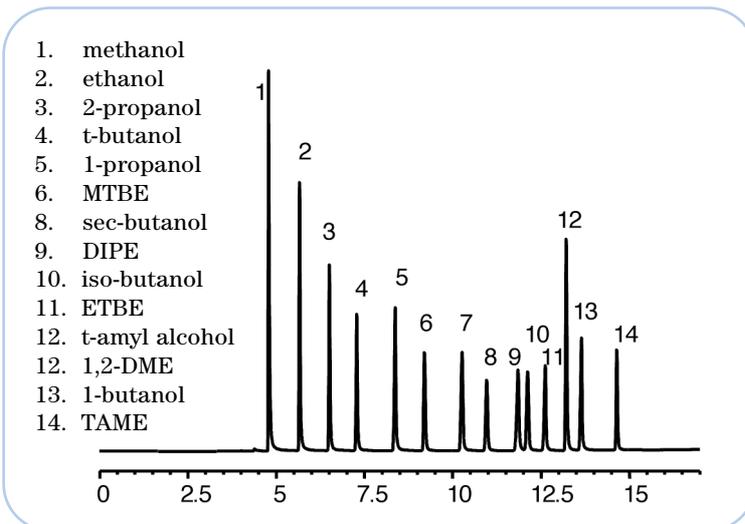
Oxygenated Flame Ionization Detector

Application 210-00

System Highlights

- Determination of oxygenated compounds in motor fuels as mandated by the US EPA per ASTM method D5599
- O-FID is highly selective for oxygenates in complex hydrocarbon matrices
- Dual reactor system that cracks non-oxygenated hydrocarbons to elemental carbon and converts oxygenated compounds to CO; second reactor converts CO to methane, which elutes to the FID
- Since oxygenated compounds are converted to and detected as methane, the response factor may be calculated using a single oxygenated compound.
- Single column, direct-injection capillary column analysis
- Fast analysis time (10–20 minutes)
- Flexibility to add automatic liquid injection for unattended analysis for multiple samples
- Can be combined with other reformulated fuels analysis on a single 6890 gas chromatograph

D5599–Oxygenates in Gasoline by OFID Application 210-00





Industry-Specific Answers

Take advantage of the industry expertise that's available to you from Agilent Technologies and our partners. We can provide the answer to your chemical analysis requirements.

Ask Agilent Technologies

Let's talk about your analysis requirements for reformulated gasoline. Contact your Agilent representative or authorized distributor. Or for more information, visit www.agilent.com/chem. Help us help you analyze your world.

A Solution Partnership

Agilent Technologies' channel partners complement our expertise in the hydrocarbon processing industry. Wasson-ECE is an Agilent Technologies Premier Solution Provider, a partnership that helps provide you with the most comprehensive analyzer solutions. Wasson's expertise in producing innovative solutions to support the hydrocarbon processing industry will greatly complement Agilent Technologies' products and knowledge.

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