



## Fuel Composition

OXYGENATES CONTENT (ASTM 5845)  
 BEZENE (ASTM 6277)  
 TOLUENE  
 TOTAL XYLENES  
 OCTANE (RON, MON, R+M/2)  
 OLEFINS  
 SATURATES  
 DISTILLATION POINTS (T50, T90)  
 EVAPORATION POINTS (E200, E300)  
 DRIVEABILITY INDEX  
 MMT CONTENT  
 VOC EMISSIONS CALCULATOR  
 - US VERSION ONLY

## Gas Sensor Portable Process Analyzer

### Complete, Compact and Automated

#### ADVANTAGES

- **Highly accurate Mid IR spectroscopic analysis**
- **Fully automated analysis, one button operation**
- **10mL sample size**
- **No sample preparation**
- **Very low cost per test**
- **No technical training of user required**
- **ASTM methods included**
- **Field, lab or refinery use**
- **Pre-calibrated**

Now one instrument produces critical results for gasoline at the touch of a button. PetroSpec's Gas Sensor Portable Process Analyzer (GS PPA) delivers **test results in three minutes**. Using mid infrared analysis, multiple chemical and physical properties are determined with far more repeatable and reproducible results than other Standard ASTM Methods.

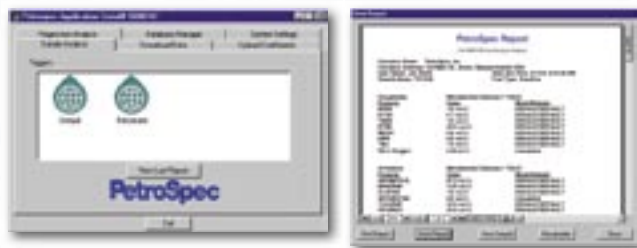
The GS PPA provides the **most complete analysis** of the widest gasoline blends worldwide. Each unit is factory calibrated with a diverse matrix of over 700 fuels, developed globally with major fuel producers delivering dependable equivalent everytime. **No sample preparation or technical training** requirements, make this portable and rugged instrument ideal for lab or field use. **Advanced accuracy and flexibility** enables effective application in R&D and refinery labs, at refinery process units, and catalytic pilot plants.

Proven performance enables **fast, simple verification** of fuel quality and specifications. Using the GS PPA allows the monitoring of product quality, optimize fuel & additive blending, **ensure government compliance**, verify chain of custody, and minimize transmix and contamination problems.

# Gasoline Analyzer *Highly accurate, low cost*

## USER CALIBRATION SOFTWARE

- Analyze the chemical spectrum of any calibration and apply different calibration models for added insight in seconds
- Gain increased accuracy with existing calibration; augment factory calibration; set training instruments to your own unique or local fuel blends
- Develop new refinery blending streams as well as new chemical and physical parameters
- Improve correlation with engine results and other test methods
- Benefit from various integrated features including regression analysis, a database management system and custom model definitions



## ANALYTES: RANGE & PERFORMANCE

	Range	Repeatability	Reproducibility
<b>Oxygenates</b> (ASTM D 5845)			
MTBE	0–20 vol %	0.13	0.98
DIPE	0–20 vol %	0.14	0.79
Ethanol	0–15 vol %	0.13	0.59
t-Butanol	0–15 vol %	0.10	0.59
ETBE	0–25 vol %	0.15	0.77
TAME	0–25 vol %	0.13	1.36
Methanol	0–10 vol %	0.07	0.37
Total Oxygen	0–5 wt %	0.05	0.30
<b>Benzene</b> (ASTM D 6277)	0–5 vol %	0.05 @ 1.0 vol %	0.13 @ 1.0 vol %
<b>Toluene</b>	0–25 vol %	0.1	0.3
<b>Total Xylenes</b>	0–25 vol %	0.1	0.6
<b>Octane</b>			
RON	86–104	0.21	1.26
MON	77–96	0.11	0.64
(R+M)/2	84–98	0.17	0.81
<b>Total Olefins</b>	0–30 vol %	0.50 @ 15.0 vol %	2.30 @ 15.0 vol %
<b>Total Saturates</b>	0–80 vol %	0.67	2.80
<b>Total Aromatics</b>	0–60 vol %	0.38 @ 25.0 vol %	2.17 @ 25.0 vol %
<b>Distillation Points</b>			
T <sub>50</sub>	155–265°F	—	—
T <sub>90</sub>	265–375°F	—	—
<b>Evaporation Points</b>			
E200	30–70 vol %	—	—
E300	75–95 vol %	—	—
<b>Driveability Index</b>	950–1380	—	—

## FOR ADDITIONAL INFORMATION

PAC • 8824 Fallbrook Dr., Houston, Texas, 77064-9912 - USA  
 Phone: 800.444.TEST [281.580.0339] | Fax: 281.580.0719  
 sales@pacpl.com | www.pacpl.com

## SPECIFICATIONS

<b>Ordering Information</b>	GS PPA Gasoline US & International Calibrations Portable Process Analyzers are designed for at-line use in the refinery or for R&D laboratories. Predict Oxygenates Content (ASTM D 5845), Benzene (ASTM D 6277), Toluene, Total Xylenes, Octane (RON, MON, R+M/2), Olefins, Saturates, Distillation Points (T50, T90), Evaporation Points (E200,E300), Driveability Index, VOC Emissions Calculator, and MMT. R version user calibration software offers added method development and flexibility (see "User Calibration Software").
P/N	BTGS-PPA US users
P/N	BTGS-PPA International users
<b>Detection Method</b>	<p>Unique Mid-Infrared Spectroscopic Analysis</p> <p>Optical Design</p> <p>Highly accurate method that uses mid-infrared light to probe a fuel sample to determine its composition and predict properties.</p> <p>Dual beam, tuned optical, temperature controlled, filter-based instrument provides long-term accuracy and stability, resistant to vibrations and water.</p>
<b>Analysis</b>	<p>Calibration</p> <p>Each unit is factory calibrated with a diverse matrix of over 700 fuels.</p> <p>Sample Induction</p> <p>Pressurized delivery system purges and fills sample cell with &lt; 10 mL of fuel for sample integrity.</p> <p>Outlier Detection</p> <p>Unusual samples are identified based on their <i>Mahalanobis</i> distances from the calibration set and are indicated by an alarm message. The data from the outlier can be used to augment the factory calibration set using the provided user software.</p> <p>User Calibration Software</p> <p>In the event that outlier fuels are detected, these outliers are easily added by the user to the calibration through user-friendly, Windows®- based calibration software. This software allows the user to download the unknown spectrum to an external computer, develop new data sets including the new spectrum, produce a new regression analysis and model coefficients and substitute these new models onto the instrument.</p> <p>With this software the GS PPA can be run from an external computer (computer not included). Taking advantage of fully computer-controlled operation, users can easily develop new calibrations and mathematical models for existing parameters, as well as create 10 new user-defined parameters. Calibrations easily transfer to online equipment.</p>
<b>Operation</b>	<p>Temperature Control</p> <p>Temperature controlled instrument</p> <p>Response Time</p> <p>&lt; 3 minutes</p> <p>Warm-Up Time</p> <p>30 minutes</p>
<b>Results</b>	<p>Display</p> <p>2 line LCD with back light</p> <p>Data Management</p> <p>Internal memory capacity stores results of up to 99 analyses, which may be viewed on the display or printed in either of two formats; infinite storage possible by remote data acquisition</p> <p>Communication</p> <p>RS 232 serial port, exporting software; parallel printer port</p>
<b>Physical Specifications</b>	<p>Cabinet/Chassis</p> <p>Fully portable, rugged aluminum with baked epoxy coating; includes a sturdy sampling fixture and carrying handle</p> <p>Utility Requirements</p> <p>120/240 VAC 50/60 Hz or 12 VDC automobile cigarette lighter adapter for mobile use</p> <p>Instrument Size</p> <p>25 x 25 x 30 cm; 12 kg</p>

Due to continuing product development, specifications subject to change at any time without notice.

YOUR LOCAL REPRESENTATIVE: