



Quality control of fuels (gasoline, diesel, kerosene, reformat)

Fast results with NIR pre-calibrations

HIGHLIGHTS

- Chemical and physical parameters
- Based on real product spectra
- Can be used by non-specialists

**Metrohm
means ...
Spectroscopy!**



Pre-calibrations expedite and simplify quality control of fuels

Metrohm offers a turnkey solution for the determination of multiple key parameters in gasoline, diesel, kerosene, and reformat according to ASTM D6122. The measurement device consists of a DS2500 Liquid Near-infrared Analyzer with pre-calibration models based on a large collection of real product spectra. This solution enables fuel producers and fuel storage facilities, such as refineries, tank farms and testing labs, to save time and reduce the cost of their analysis.

Fuels such as gasoline, diesel and kerosene are widespread products in daily life. At the end of the production process and at various steps in the distribution chain, the quality of the product needs to be determined. Typically several key parameters such as RON, MON, aromatics, cetane index and flash point are determined in the laboratory by chemical and physical methods. These methods do not only have high running cost but are also time consuming.

Near Infrared Spectroscopy (NIRS) on the other hand requires neither chemicals nor sample preparation, it can even be used by non-chemists and provides results in less than a minute. Furthermore, multiple chemical and physical parameters can be determined simultaneously. The combined benefits of this technology make NIRS the ideal solution for a large number of daily QA/QC measurements or ad-hoc at-line analysis.



EASY TO USE

- Ready-to-use solution
- Results at the push of a button
- No expertise required



COST-MINIMIZING

- No solvents, no reagents
- No waste disposal



FAST

- No sample preparation
- Analysis results within 30 seconds
- More than 15 minutes' time saving compared to reference methods



CLEAN

- Non-destructive, chemical-free method
- Minimum of impact on health and environment

Reliable results from day one

The robust pre-calibration models allow precise and accurate determination of different parameters with excellent reproducibility. The Metrohm solution can be used directly as a starter model without any method development.

Straightforward and intuitive operation

The pre-calibrations are operated by the intuitive Vision Air software. Vision Air is tailored to the needs of different users: shift workers can only start a measurement and get clear pass/fail results. Authorized users get full control of the instrument, can create SOPs and can easily review and filter data.

AVAILABLE PETRO PRE-CALIBRATIONS

Fuel	Part. No	Parameters	Range	SECV	R ²		
Gasoline	6.6072.306	RON	81–100	0.63	0.973		
		MON	80–88	0.52	0.920		
		Anti-Knock Index	83–94	0.49	0.966		
		Aromatics	17–58 %	1.17 %	0.970		
		Benzene	0.15–1.00 %	0.04 %	0.902		
		Density	0.71–0.80 g/cm ³	0.0023 g/cm ³	0.973		
		Olefins	0–25 %	1.30 %	0.909		
		Oxygenates	0.2–2.0 %	0.05 %	0.994		
		Diesel	6.6072.305	Cetane index	46–77	0.62	0.987
Cetane number	45–60			0.94	0.942		
Density	0.82–0.89 g/cm ³			0.0021 g/cm ³	0.968		
CFPP	–22 – (+19) °C			2.4 °C	0.968		
T95	325–410 °C			4.4 °C	0.791		
Flash Point	56–120 °C			2.7 °C	0.970		
Viscosity	2–5.5 cSt			0.15 cSt	0.910		
Kerosene	6.6702.307			Cetane index	36–50	0.90	0.907
				API gravity	38–48 °	0.56 °	0.931
		Aromatics	10–25 %	1 %	0.851		
		T10	158–200 °C	3.74 °C	0.833		
		T20	165–205 °C	2.66 °C	0.909		
		T50	180–220 °C	3.19 °C	0.876		
		Density	0.78–0.83 g/cm ³	0.003 g/cm ³	0.936		
		Flash Point	38–65 °C	2.55 °C	0.8731		
		Freeze Point	–65 – (–40) °C	2.10 °C	0.850		
		Hydrogen	13.2–14.2 %	0.05 %	0.936		
		Saturates	75–90 %	0.81 %	0.910		
Viscosity at 20°C	3–7 cSt	0.19 cSt	0.937				
Reformat	6.6702.315	RON	67–101	0.37	0.994		
		Density	0.71–0.84 g/cm ³	0.0039 g/cm ³	0.986		
		Olefins	0.3–18.0 %	0.35 %	0.850		
		Aromatics	0.5–70.4 %	0.91 %	0.999		

Trust in our Expertise

Pre-calibrations are calibration models based on numerous real product spectra. By using these solutions, you can benefit immediately from the experience Metrohm has gained with those applications.

Customized service and support

Metrohm supports users by updating the petrol pre-calibrations on demand with customer specific samples. This improves the performance of the method and/or extends it to additional quality parameters e.g. acid value and moisture.

ORDERING INFORMATION

Pre-calibrations for fuel analysis	
6.6072.305	Pre-calibration for Diesel
6.6072.306	Pre-calibration for Gasoline
6.6072.307	Pre-calibration for Jet-Fuel
6.6072.315	Pre-calibration for Reformate

Requires hardware	
2.929.0010	DS2500 Liquid Analyzer
6.7492.020	DS2500 Holder 8 mm disposable vials

Requires software	
6.6072.201	Vision Air

Recommended standards	
6.7494.000	DS2500 Liquid Wavelength Standard

Accessories	
6.7402.000	Disposable Vials 8mm, 250 Pcs

COMPLETE PACKAGE: METROHM PETRO ANALYZER

2.929.200	NIRS DS2500 Petro Analyzer (comprised of):
2.929.0010	DS2500 Liquid Analyzer
6.7492.020	DS2500 Holder 8 mm disposable vials
6.7402.000	Disposable Vials 8mm, 250 Pcs
6.6072.208	Vision Air Complete
See Above	Pre-calibration for fuels (choose 1)

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