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GRABNER INSTRUMENTS

Анализатор давления насыщенных паров MINIVAP VPL VISION

Технические характеристики

MINIVAP VPL *VISION*

Engineered for Highest Precision

The MINIVAP VPL Vision offers unmatched precision for vapor pressure testing of gasoline, jet fuel, pure and multi-component solvents or flavors in a pressure range of 0.1 - 150 kPa. Routine testing on low volatile samples can be performed with a precision of less than 0.1 kPa. The instrument includes Grabner´s static methods, that test the absolute vapor pressure of samples and deliver results that correlate well to the ASTM D2879 Isoteniscope Method.

BENEFITS

- **Low Volatility - Highest Precision!**
  Low vapor pressure is difficult to measure with standard apparatus. The VPL Vision is optimized for a pressure range of 0.1 to 150 kPa and offers unmatched repeatability of less than 0.1 kPa!

- **Modern Replacement of Isoteniscope**
  In the MINIVAP VPL Vision, the absolute vapor pressure is measured by the Triple Expansion method, which yields results equivalent to the ASTM D2879 Isoteniscope method.

- **All Methods for Fuels and Chemicals**
  The VPL Vision includes all standard vapor pressure methods for testing gasoline and jet fuels. And it features static VOC methods for testing pure or multi-component chemicals.

- **Maintaining Sample Composition**
  To determine the absolute vapor pressure, dissolved and entrained air has to be removed from the sample. In the Isoteniscope this is done by evacuation. But even careful evacuation bears the risk that volatile constituents of the sample are being removed. The piston based technology of the VPL Vision removes air from the measurement result and does not require a vacuum pump. Multi-component samples can be measured without changing sample composition.

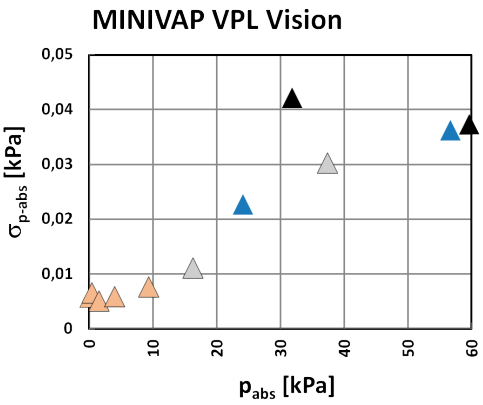
- **Minimizing Residual Contamination**
  Through a clever combination of the well proven Sampling Pro™ valves and automatic rinsing, cross-contamination between samples is minimized.

- **Versatile and Easy to Use**
  Single- and multi-point measurements can be performed over a wide temperature range from 0-120°C. To generate a fast equilibrium, a shaker is installed. No experienced personnel is required to perform a test: After connecting the sample to the instrument and pressing "RUN", an automatic measurement is performed. A standard result is obtained in 5 minutes.

AVAILABLE METHODS

- Direct/Indirect VOC Methods; ASTM D5191, D5188, D6378; EN 13016-1+2, IP 394, 409, 481; JIS K2258-2, SHT 0769, 0794, SNT 2932, GOST 52340
- Excellent correlation to ASTM D323, D2879, D4953, D5482
- **ASTM D2879 Isoteniscope Method**
  An Isoteniscope is the standard instrument for testing low absolute vapor pressures. This static method is tedious to use and requires highly skilled and experienced personnel, especially when performing the outgassing procedure. The measurement typically is time consuming and not very repeatable. Consequently, this method is not useful for routine measurements.
- **Direct VOC Measurement**
  The VPL Vision tests the absolute vapor pressure of low volatile samples directly according to the static Triple Expansion Method. No sample evacuation is required, thus a possible operator bias is eliminated. Full automation and high precision make the VPL Vision the perfect replacement for the Isoteniscope. For increased precision, the maximum pressure is limited to 150 kPa.

PRECISION



Substance	Temp. [°C]	pnom [kPa]	σ pabs [kPa]	Precision (1.96 x σ)	# of Tests
n-Decane	20	0.14	0.006	0.011	82
	40	0.49	0.007	0.013	82
	60	1.51	0.005	0.010	82
	80	3.99	0.006	0.012	82
	100	9.37	0.008	0.015	82
n-Hexane	20	16.32	0.011	0.022	82
	40	37.45	0.030	0.059	82
n-Pentane	0	24.24	0.023	0.045	41
	20	56.7	0.035	0.068	205
Gasoline	20	-	0.042	0.08	82
	37.8	-	0.037	0.07	82

TECHNICAL DATA

ACCESS. ANYWHERE. ANYTIME.

Temperature Range	Measured: 0 to 120°C (32 to 248°F), user programmable Extrapolated: -100 to 300°C (-148 to 572°F)
Temperature Stability	+/- 0.01°C (0.018°F)
Temperature Profiles	Single temperature, multipoint, curve, extrapolation
Pressure Range	0 to 150 kPa (0 to 21.8 psi)
Pressure Resolution	0.01 kPa (0.0014 psi)
Precision	Repeatability r ≤ 0.1 kPa for low volatile samples
Vapor/Liquid Ratio	0.02/1 to 100/1, depending on method
Sample Volume	1 mL (2.2 mL per rinsing cycle)
PC Software	Grabner Cockpit™ with automatic instrument recognition for multi-location results and user management, remote device configuration, update, diagnostics, support and calibration checks
Interfaces	2x USB, 2x LAN (1x DVI-I, 1x RS 232) for direct connection to LIMS, PC, printer, LIMS, keyboard, mouse or barcode reader
Power Supply	100-264 V AC, 45-63Hz, 80W (Switching Power Supply)
Environmental, Shock, Vibration Certificates	EN 60068-2-1, EN 60068-2-78, EN 60068-2-14; EN 60068-2-6, EN 60068-2-27 (IEC 60721-3-2, Class 2M2)
Dimensions / Weight	293 x 390 x 280 mm (10.5 x 15.4 x 11 inch) / 10.5 kg (28lb)

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