



Description

The GDP-C is designed for testing the permeability of dry gases on films and similar materials according to the manometric principle (ISO 15105-1). The sample is put between the top and bottom part of the permeation cell. The volume of the bottom part is as small as possible and known. Prior to each test the bottom part of the permeation cell is evacuated. Choosing method A, the top part will be evacuated additionally. During testing the top part is filled with the test gas. The gas permeating the material causes a pressure increase at the bottom part of the permeation cell.

You can detect the gas permeability by evaluating this increase in pressure in relation to time and the device-specific volume. The increase in pressure during the test period is evaluated and displayed by an external computer. The PC is connected to the GDP-C with a serial interface.

You can adjust the sample temperature within the range of -20°C and 80°C using an external water bath circulator.

Typical application

Quality control in production

Tuning development of packagings

Materials research

Suitable samples: plastic films, composite foils, flat packaging materials, rubber, coated paper...

Features

- **PC Evaluation:** The external PC evaluates data recorded by the GDP-C. You can therefore use a single PC for more than one GDP-C.
- **Windows Software:** The evaluation software is compatible with all common Windows versions.
- **Instant Access:** If requested, the GDP-C is shipped fully configured PC and instantly ready to use.
- **Data Transfer:** Test results are written to Access and the raw data can be imported into Excel.
- **Flexible use:** The GDP-C can measure all non-corrosive and non-flammable gases.
- **Automation:** After setting pre-defined evacuation periods within the range of 10 seconds through 48 hours the test will be executed automatically.
- **Flexible temperature range:** Using an external water bath circulator the permeation of the test specimen may be determined within a temperature range of -20°C through $+60^{\circ}\text{C}$.
- **Testing range:** Fast and exact measurement of permeabilities from 0.5 to 30,000 $\text{ccm}/(\text{m}^2 \text{ d bar})$
- **LCD panel:** Important parameters at a glance.
- **Temperature compensated pressure sensor:** A special enhanced sensor allows you to test films with very low permeation values in rooms without air conditioning control.

Accessories

- **Vacuum pump** required
- **Thermostat** recommended
- **Windows PC** required

Specifications

Test method	Quantitative determination of the gas permeability of film materials using differential pressure (manometric method)
Test gas	All non-corrosive and non-flamable gases
Recommended gas flow	60 bis 100 cm ³ /min
Measuring Range	0.5 cm ³ /(m ² d bar) bis 30,000 cm ³ /(m ² d bar)
Resolution	0.1 cm ³ /(m ² d bar)
Main pressure sensor	piezoresistive element, temperature stabilised
Measuring range	0 hPa to 1100 hPa
Tolerance (absolut)	< 0.3% of the final pressure (1000 hPa)
Resolution	0.01 hPa (display) , 21 Bit (internal)
Data storage	up to 4096 test values (with dynamic time interval selection)
Pressure absorption gauge	piezoresistive element (0 hPa to 2000 hPa)
Tolerance	< 1% of the final pressure (1000 hPa)
Resolution (display)	0.1 hPa
Data storage	up to 512 test values (width dynamic time interval selection)
Sample temperature range	-20 °C to 80°C (with external thermostat)
Tolerance (temperature sensors)	+/- 1.5°C
Resolution of the temperature display	0.1°C
Data storage	up to 512 test values (with dynamic time interval selection)
PC interface	serial interface RS232, 115.200 Baud
Dimensions	50 x 31 x 74 cm
Weight	20 kg
Storage temperature	0°C - 50°C
Working temperature	20°C - 26°C (to be constant during operation when testing films with a low GTR)
Relative humidity	max. 80%, non-condensing
Electrical connection GDPC	230 V / 50 - 60Hz, power consumption ca. 50 W, approx.
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Electrical connection monitor	230 V / 50 - 60Hz, power consumption ca. 50 W, approx.
Electrical connection water bath circulator	230 V / 50 - 60Hz, power consumption ca. 2300 W, approx.
Standard	ISO 15105-1 / ASTM D1434-82(2015) procedure M