

Instrument za određivanje propusnosti plinova / Gas Permeability Tester

GDP-C



PROIZVOĐAČ I MODEL

Brugger-Feinmechanik GmbH

MANUFACTURER AND TYPE

Brugger-Feinmechanik GmbH

Kratki opis metode

Uzorak se postavi između gornjeg i donjeg dijela permeacijske ćelije. Volumen donjeg dijela ćelije je poznat. Prije mjerenja evakuira se zrak iz donjeg dijela ćelije. Tijekom mjerenja gornji dio ćelije se ispunjava mjernim plinom. Plin koji prolazi kroz materijal uzorkuje porast tlaka u donjem dijelu ćelije. Tijekom mjerenja registrira se porast tlaka i očitava na računalu serijski povezanim s instrumentom. Temperatura uzorka (-20°C do 60°C) se podešava preko vanjskog termostata.

Short description of the method

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. During testing the top part is filled with the test gas. The gas permeating the material causes a pressure increases at the bottom part of the permeation cell. 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. Sample temperature can be adjusted within the range of -20°C and 60°C using an external thermostat.

Namjena

GDP-C instrumentom određuje se propusnost plinova (suhih ili vlažnih) kroz polimerne filmove (monofilmove, laminate) manometarskom metodom. Metoda A, pored određivanja propusnosti plina, omogućuje i određivanje konstante difuzije i topljivosti plina u filmu, primjenom Time-Lag metode po Barreru.

Purpose

The GDP-C is designed for testing the permeability of dry and humid gases on polymeric films (monofilms, laminates) according to the manometric principle. Method A not only determines the gas permeability but also the diffusion constant and the solubility of the test gas in the film strip using a special PC evaluation (Time Lag method according to Barrer).

Tehničke značajke

Preporučeni protok plina	60 to 100 cm ³ /min
Mjerno područje	0.5 cm ³ /(m ² d bar) do 30.000 cm ³ /(m ² d bar)
Temperaturno područje uzorka	-20°C do 60°C (vanjski termostat)
Dimenzije	50 x 31 x 74 cm
Masa	20 kg
Električni priključak GDPC	230 V/50 - 60 Hz, potrošnja snage 50 W (približno).
Neophodni dodaci	Vakuumpumpa

Technical characteristics

Recommended gas flow	60 to 100 cm ³ /min
Measuring Range	0.5 cm ³ /(m ² d bar) to 30.000 cm ³ /(m ² d bar)
Sample temperature range	-20°C to 60°C (with external thermostat)
Dimensions	50 x 31 x 74 cm
Weight	20 kg
Electrical connection GDPC	230 V/50 - 60 Hz, power consumption 50 W, approx.
Required Accessories	Vacuum Pump

Tip i priprava uzorka

Polimerni ambalažni materijali promjera 108 mm.

Sample type and preparation

Polymeric packaging materials 108 mm in diameter.

Standard

ISO 15105-1:2007	Plastics – Film and sheeting – Determination of gas-transmission rate – Part 1: Differential-pressure methods
ASTM D1434-82 (2015)e1	Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheet

Vakuumpumpa / Vacuum pump / Rotary Vane Pump DUO 2.5, 230V, 50Hz



2,5m³/h rotary vane pump; 230V, 50Hz; -very quiet, only 53dbA; DN16 vacuum connection