Oxygen Permeation Analyzer

https://search.researchequipment.wur.nl/SearchDetail.aspx?deviceid=45e4bfc8-1ccc-4594-83be-b25f69a4c8e4

Brand

MOCON Oxtran

Type

2/22L

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Organisation

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Description

Oxygen transmission rate (OTR) is one of the most important packaging properties to ensure the optimal storage condition of produce. Although OTR of commercial packaging films are often indicated by packaging suppliers under standard condition (23°C and 0% relative humidity), we know that the packaging film reacts differently to its environment (storage temperature and relative humidity). Research on the OTR stability of packaging film/concept under real storage conditions is essential to develop the optimal packaging. The Ox-Tran 2.22 model L instrument enables measurement of the OTR of packaging film and of complete packaging concepts of food and non-food packaging materials under a large range of storage conditions (temperature and relative humidity).
The Ox-Tran 2/22L instrument is equipped with a Coulox® oxygen sensor allowing short exam times, accurate and repeatable results, and complies fully with ASTM D3985 norm.
Advantages:
• OTR measurement is applied on two films sample simultaneously.
• The Ox-Tran 2/22L equipment is able to measure the OTR of flexible packaging samples with an area between 5 and 50cm².
• External modules allow the OTR measurement of complete and/or rigid packaging design such trays and bottle for instance.
• The OTR measurement is applied at controlled environmental conditions regulated by the instrument itself. An extra module is available to determine OTR value of foil sample at more extreme storage condition (between 1 and 10°C or above 40°C).
• Relative humidity on both size of the foil sample can be actively regulated by the Ox-Tran 2/22L instrument within a range of 0 to 90%.
• Instrument is able via its sequential test option to perform succinctly and automatically OTR measurement at predefined relative humidity conditions.
Optional items
• Computer equipment and software are available for automatic and remote control of the instrument. A large range of testing gas and equipment are also available to support the measurement of large packaging range.
• Complies with ASTM D3985 and F1927 norms

Technical Details

• OTR range of flexible packaging sample between 0.005 and 2000 cm3 O2/m².day.
• OTR range of rigid or complete packaging design sample between 0.00025 and 9 cm3 O2/package.day.
• Automatic test temperature between 10 and 40°C ± 0.2°C.
• Automatic controlled relative humidity testing range between 0 and 90% ± 3%.
• Cartridges for standard film test area (50cm²) and reduced film test area (5.64cm²).
• Minimum film size: 10.2* 10.2 cm for standard film test area (50cm²) or 5.1*5.1cm for reduced film test area (5.64cm²).
• Film thickness: up to 3 mm.
• Package testing adaptor and packaging mounting support.
• External foil testing adaptor.
• Climate chamber available to control temperature and relative humidity for foil testing at extreme range: (1-10°C or >40°C; 30-90% RH) and for complete and/or rigid packaging design (10-40°C – 30-90% RH).
• 3 certified films available.
• Remote viewing software from a PC- PermNet Lite.

Applications

The Ox-Tran instrument allows to measure the oxygen transmission rate (also called the oxygen barrier property) of packaging material of food as well as non-food products. Measuring the OTR properties of packaging film under environmental condition near to the real storage conditions allows food manufacturers to select the most optimal packaging material and thus extend significantly the shelf life performance of food products, which will contribute to reducing food waste.
Studying the effect of temperature and relative humidity on the OTR properties of packaging material is also essential to understand the physical properties and behaviours of oil- and bio-based packaging material. Measuring the OTR of new generation film at different storage conditions (temperature and relative humidity) will help researcher and company to develop new packaging concept using less plastic. The new generation packaging material should be at least similar or better than the OTR properties of conventional packaging material.