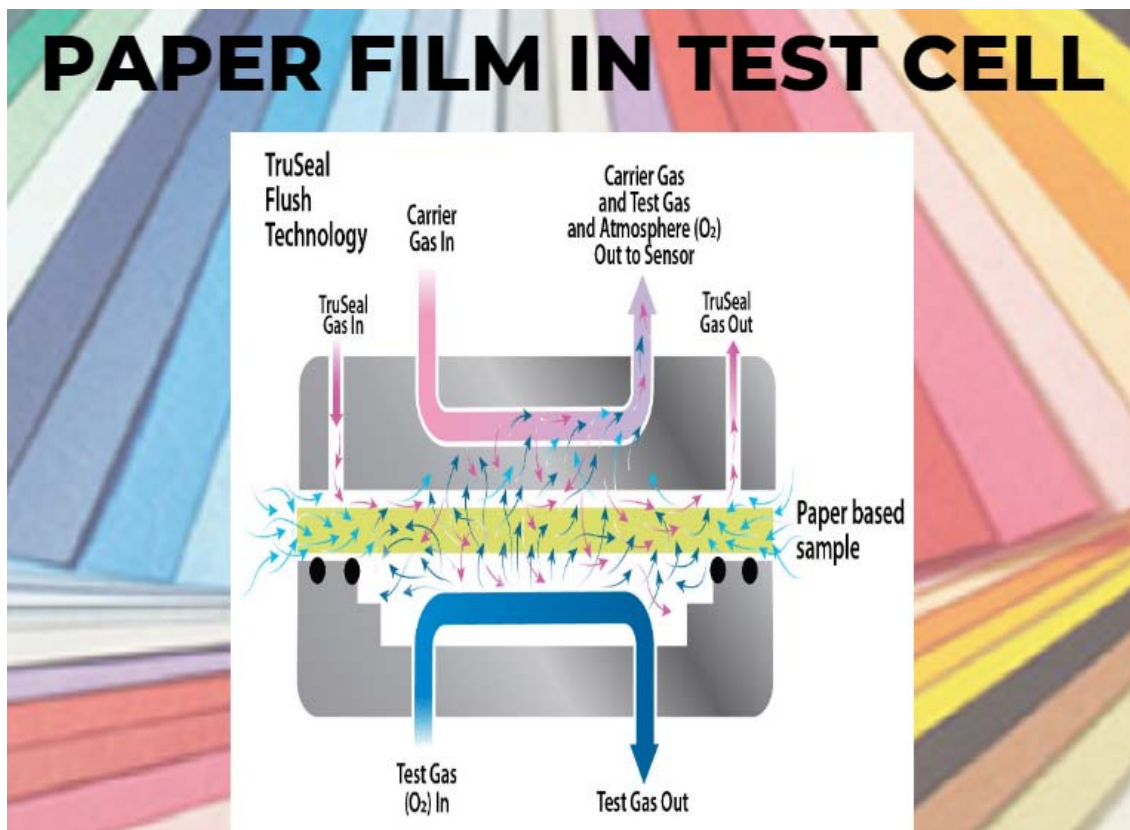


Mejorando soluciones en los test de permeabilidad de papel estucado



Las estructuras de barrera basadas en papel, de manera innata, han sido más difíciles de obtener datos precisos debido a su naturaleza porosa.

Dado que la permeabilidad consiste en movimientos moleculares aleatorios, una vez que el oxígeno o la humedad se mueven hacia la estructura del papel, parte del gas fluye lateralmente, lo que a menudo genera datos erróneos.

Se deben realizar los tests con la debida diligencia para garantizar un recubrimiento de barrera consistente.

Para obtener datos precisos, se debe impedir la difusión a través de los bordes de la muestra. Esto se puede hacer de diferentes formas.

El método más seguro es usar una máscara para definir el área de exposición y sellar los bordes con epoxi antes del análisis.

El enmascaramiento de doble hoja también puede ser suficiente para sellar bordes en films delgados de menos de 12mil. de espesor.

Si el papel tiene un revestimiento uniforme en ambos lados, se puede utilizar el cartucho de efecto de borde.

Para obtener más información, lea más abajo.

Este innovador cartucho de film bloquea los bordes de la muestra de la atmósfera sin el uso de epoxi de máscaras.

Los films de papel que tienen una superficie texturizada a menudo tienen fugas, lo que hace imposible obtener resultados precisos. En este caso, sellar la interfaz muestra/máscara con epoxi bloquea la difusión lateral y solo permite la permeabilidad normal a la misma superficie.

Los expertos de MOCON han proporcionado las soluciones para superar los desafíos de los test basados en papel con una guía especial sobre cómo preparar muestras de papel estucado para pruebas precisas.

HOW TO ACHIEVE MORE CONSISTENT TEST RESULTS USING EDGE EFFECT CARTRIDGES

Edge Effect Cartridges are a simple and accurate way to minimize edge effect while testing transmission rates of coated paper materials.

Challenge

Legacy testing methods lack the ability to precisely test oxygen transmission rates (OTR) and water vapor transmission rates (WVTR) in coated paperboard packaging materials. The reason companies often have difficulty obtaining consistent permeation test results for coated paper materials is due to edge effect.

Edge effect occurs when oxygen and/or moisture from the ambient environment leaks through the edge of a permeation test sample such as coated paper, coated paperboard or laminate. Typically, edge effect influences test results when ambient air or moisture increases or dilutes the desired test gas gradient.

Solution

MOCON Edge Effect Cartridges are designed to eliminate edge effect by effectively sealing off the edge during testing to prevent oxygen and/or moisture from migrating into or out of the test cell. This ensures more precise and repeatable data on transmission rates through the material, not the edge. Edge Effect Cartridges can be used to test samples up to 125 mil (1/8") or 3.175mm thick.



*Many environmentally
friendly packages utilize
paper-based materials*

EDGE EFFECT CAN LEAD TO INACCURATE & VARIABLE DATA

APPLICATION NOTE

Benefits

When used with OX-TRAN® Model 2/12, 2/22 or PERMATRAN-W® Model 3/34, Edge Effect Cartridges provide accurate and consistent data, so customers can make better, more informed decisions about packaging materials to protect their products.

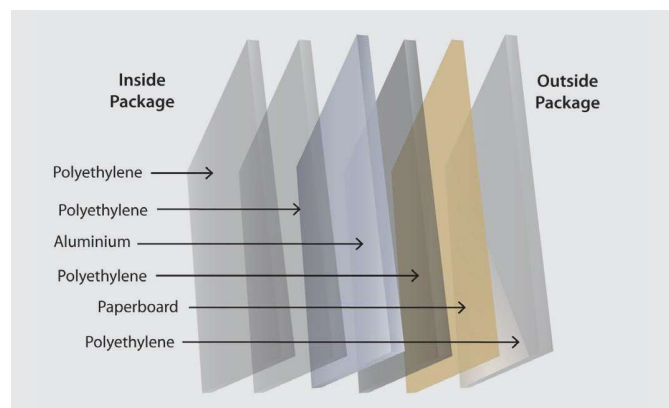
Obtaining accurate transmission rate results enables companies to select the most effective coatings and lightweight packaging that reduce costs and deliver desired shelf life while protecting the OEM brand contents.

Case Study

The following test results illustrate the variability in WVTR using a standard cell compared to an Edge Effect Cartridge.

PRODUCT: COATING 501/PAPERBOARD D

Test Date	WVTR g/(m ² · day) at 23°C and 50% RH	
	Standard Cell	Edge Effect Cartridge
JANUARY 5	3.24	4.36
JULY 20	5.78	4.50
COMMENTS	More variation with seasonal ambient RH	Consistent, not influenced by environment RH



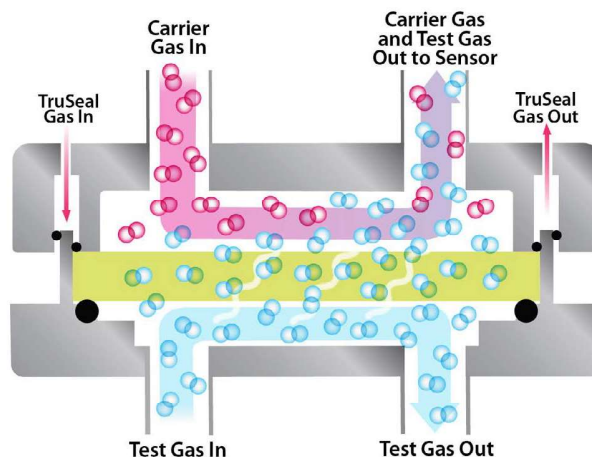
Many paper-based material integrate additional layers to increase barrier protection

Types of Edge Effect Cartridges

There are two types of MOCON Edge Effect Cartridges:

- One type is designed to test OTR, and/or WVTR with precise relative humidity (RH). This type has two small holes for test gas inlet and outlet in the test gas chamber.
- The other type of Edge Effect Cartridge is designed to test WVTR with 100% RH. This type has one small hole to vent pressure in the test gas chamber and a sponge.

It is important to select the specific Edge Effect Cartridge for testing at precise RH or 100% RH.



Edge Effect cartridge design blocks leakage from the cross section of the barrier sample



Edge Effect cartridge 2-piece design is easy to use



Equipos de control de calidad

Tel.: (+34) 934.501.600
Tel.: (+34) 918.285.651
Tel.: (+34) 946.455.054
ermec@ermec.net
www.ermec.net



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MOCON, Inc.
7500 Mendelssohn Ave N.
Minneapolis, MN 55428 USA
info.mocon@ametech.com
www.ametekmocon.com