

チューブ水蒸気透過率(WVTR)テストレポート

我々は、MOCON 水蒸気透過率測定装置 PERMATRAN-W 3/33 シリーズを使い、VIVAの射出成型チューブ及び押出チューブの両方の水蒸気透過率測定を実施した。検査方法は、ASTM F1249を使用した。試験結果の正確性を期する為、下記5種類の検査を行った。

項目	水蒸気透過率テスト結果 (gm/pkg/日)	水蒸気透過率テスト結果 (gm/m ² /日)
1. EVOHバリアー付き押し出し成型チューブ	0.004374	0.17
2. フォイルバリアー付き、VIVA射出成型チューブ	0.001751	0.09
3. フォイルバリアー付き(肩部を含む)、VIVA射出成型チューブ	0.002054	0.10
4. EVOHバリアー付き、VIVA射出成型チューブ	0.004015	0.18
5. EVOHバリアー付き(肩部を含む)、VIVA射出成型チューブ	0.004085	0.19

注:

水蒸気透過率(WVTR)テストレポート (gm/pkg/日)は、結果を比較する為、(gm/m²/日)に変換しております。

算定方法は、下記の通りです。

全表面積 = チューブ面積 + 肩部面積 = A m²
水蒸気透過率(WVTR)テストレポートから= Z gm/pkg/日
水蒸気透過率(gm/m²/日)=(Z / A)gm /m²/日

概要:

VIVAのフォイル/EVOHバリアー付き、射出成型チューブは、EVOHバリアー付き押し出し成型チューブより良い水蒸気透過率(WVTR)を達成することができます。
現在の市場でバリア特性を必要とする日焼け止め、ヘア・ケア、スキン・ケア、パーソナル・ケアそして食品などカバーします。

MOCON PERMATRAN-W® 3/33 - Single Test Report

Material Id: <C1a> Test Number: <D50 Extruded Tube with EVOH Barrier>
 Using Method: ASTM F1249, Calibrated: 11/15/2011 3:30:55 PM

MODULE INFORMATION:

Module 3, Serial Number: MG_01599
 Setup Name: fault Setup
 Temp Setpoint/Actual: Auto: 23.0 / 23.1 °C.
 Barometric Pressure: Manual: 760.00 mmHg
 Relative Humidity: Cell A - Man: 100.0%
 Flow Rate: Auto: 10.15

 Ambient Temp: Manual: 23.0 °C.

CELL A INFORMATION:

Sample Type: pkg: 0.4mm
 Test Mode: Continuous
 Control Params: Infinite
 ExamMinutes: 45
 Individual Zero: Use Last: 5.8741 E-5
 Conditioning: 1 Hour
 Cycles Complete: 5
 Current Status: Test Done
 Started Testing: 12/20/2011 8:41:16 AM
 Elapsed Time: 9:00

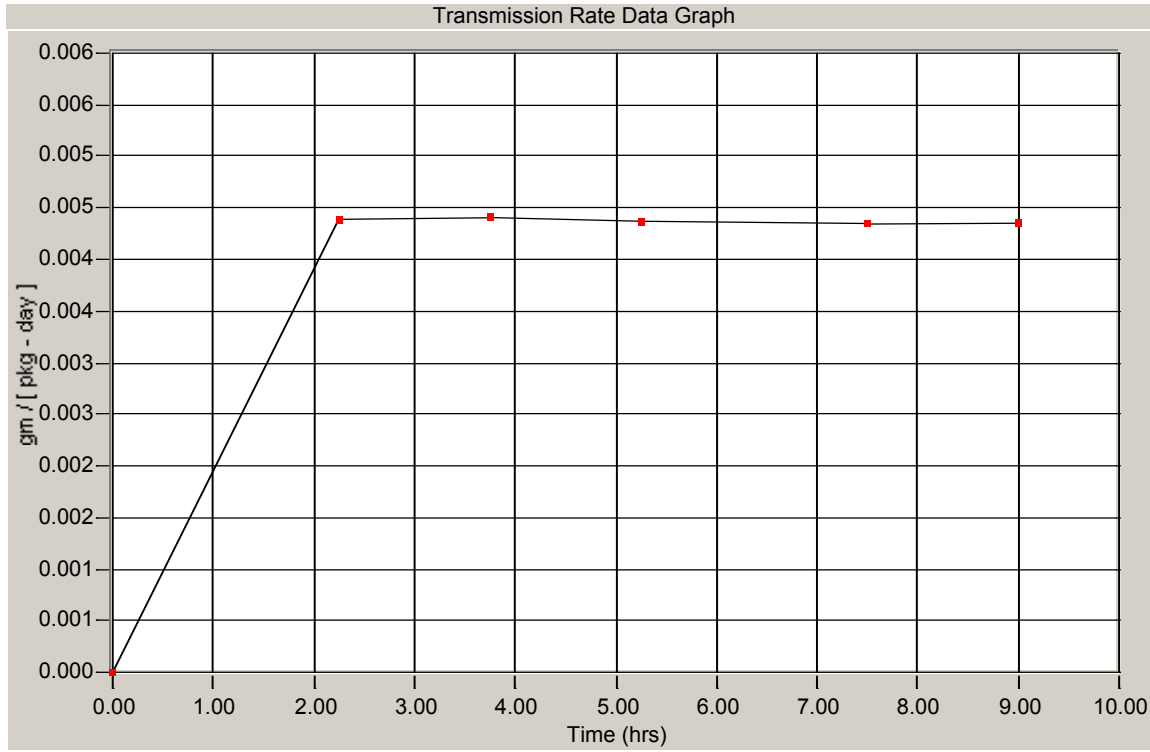
TEST RESULTS

IN SELECTED UNITS

Transmission Rate: 4.3737 E-3 gm / [pkg - day]
 Permeation: 4.3737 E-3 gm - mil / [pkg - day]

DATA POINTS

Time	Rate/Event	Time	Rate/Event	Time	Rate/Event	Time	Rate/Event
0:00	Condition	0:00	Test	2:15	4.3809 E-3	3:45	4.4116 E-3
5:15	4.3654 E-3	7:30	4.3463 E-3	9:00	4.3737 E-3		



MOCON PERMATRAN-W® 3/33 - Single Test Report

Material Id: <v22b> Test Number: <D40 Injection-molded Tube with Foil Barrier>
 Using Method: ASTM F1249, Calibrated: 11/15/2011 3:30:55 PM

MODULE INFORMATION:

Module 3, Serial Number: MG_01599
 Setup Name: fault Setup
 Temp Setpoint/Actual: Auto: 23.0 / 23.0 °C.
 Barometric Pressure: Manual: 760.00 mmHg
 Relative Humidity: Cell B - Man: 100.0%
 Flow Rate: Auto: 9.86
 Ambient Temp: Manual: 23.0 °C.

CELL B INFORMATION:

Sample Type: pkg: 0.4mm
 Test Mode: Continuous
 Control Params: Infinite
 ExamMinutes: 45
 Individual Zero: Use Last: 1.6437 E-5
 Conditioning: Disabled
 Cycles Complete: 4
 Current Status: Test Done
 Started Testing: 12/22/2011 8:29:13 AM
 Elapsed Time: 6:44

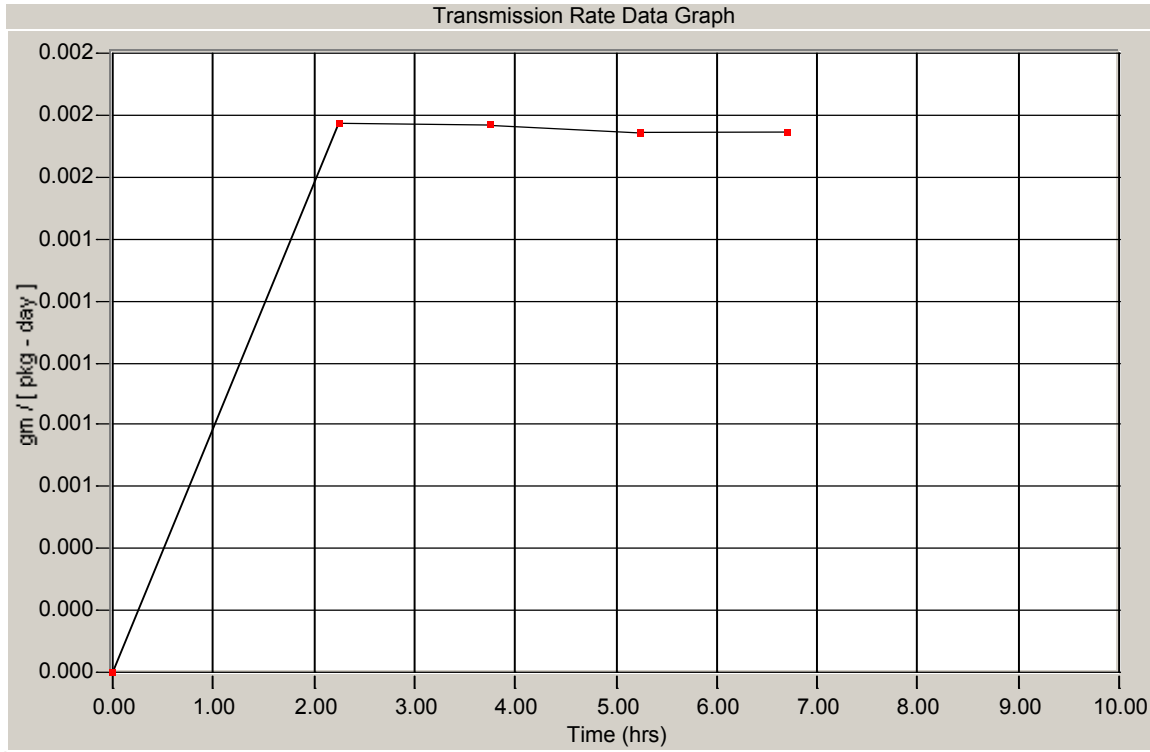
TEST RESULTS

IN SELECTED UNITS

Transmission Rate: 1.7509 E-3 gm / [pkg - day]
 Permeation: 1.7509 E-3 gm - mil / [pkg - day]

DATA POINTS

Time	Rate/Event	Time	Rate/Event	Time	Rate/Event	Time	Rate/Event
0:00	Test	2:14	1.7733 E-3	3:44	1.7673 E-3	5:14	1.7513 E-3
6:44	1.7509 E-3	7:44	Complete				



MOCON PERMATRAN-W® 3/33 - Single Test Report

Material Id: <v21e> Test Number: <D40 Injection-molded Tube with Foil Barrier & Shoulder>
 Using Method: ASTM F1249, Calibrated: 11/15/2011 3:30:55 PM

MODULE INFORMATION:

Module 3, Serial Number: MG_01599
 Setup Name: fault Setup
 Temp Setpoint/Actual: Auto: 23.0 / 23.1 °C.
 Barometric Pressure: Manual: 760.00 mmHg
 Relative Humidity: Cell A - Man: 100.0%
 Flow Rate: Auto: 10.18
 Ambient Temp: Manual: 23.0 °C.

CELL A INFORMATION:

Sample Type: pkg: 0.4mm
 Test Mode: Continuous
 Control Params: Infinite
 ExamMinutes: 45
 Individual Zero: Use Last: 5.8741 E-5
 Conditioning: 1 Hour
 Cycles Complete: 5
 Current Status: Test Done
 Started Testing: 12/21/2011 8:16:59 AM
 Elapsed Time: 8:15

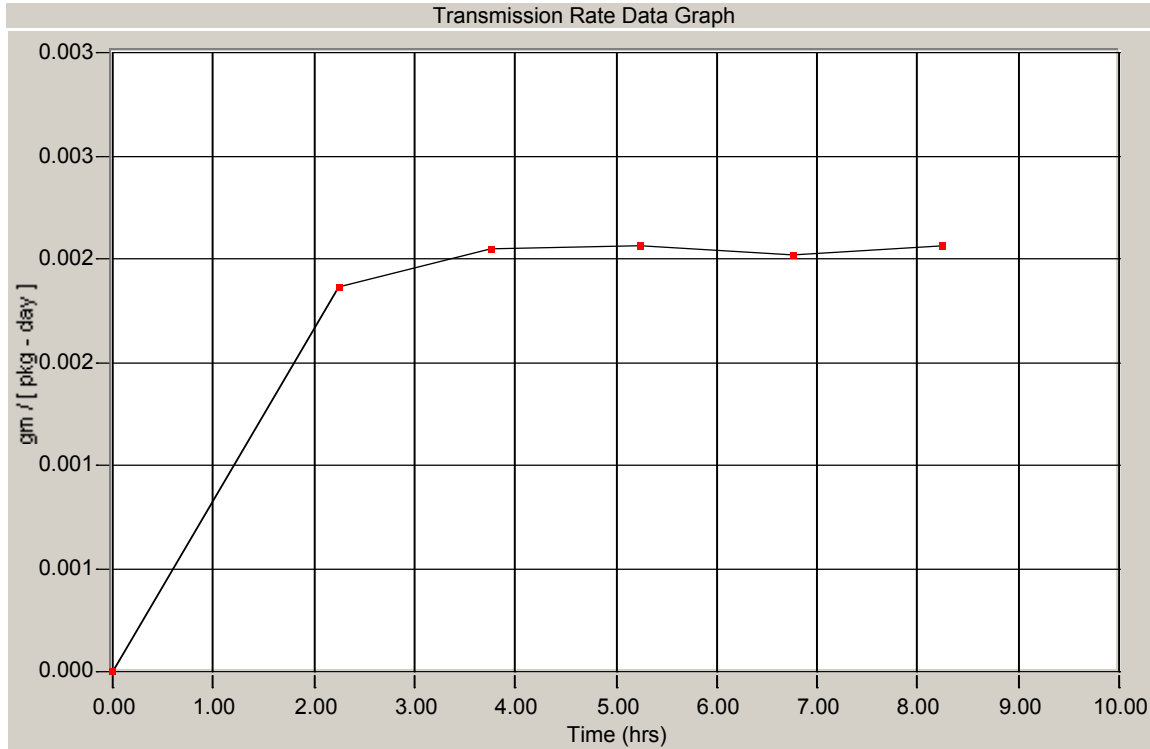
TEST RESULTS

IN SELECTED UNITS

Transmission Rate: 2.0540 E-3 gm / [pkg - day]
 Permeation: 2.0540 E-3 gm - mil / [pkg - day]

DATA POINTS

Time	Rate/Event	Time	Rate/Event	Time	Rate/Event	Time	Rate/Event
0:00	Condition	0:00	Test	2:15	1.8651 E-3	3:45	2.0438 E-3
5:15	2.0452 E-3	6:45	2.0147 E-3	8:15	2.0540 E-3	8:15	Complete



MOCON PERMATRAN-W® 3/33 - Single Test Report

Material Id: <23d> Test Number: <D40 Injection-molded Tube with EVOH Barrier>
 Using Method: ASTM F1249, Calibrated: 11/15/2011 3:30:55 PM

MODULE INFORMATION:

Module 3, Serial Number: MG_01599
 Setup Name: fault Setup
 Temp Setpoint/Actual: Auto: 23.0 / 23.1 °C.
 Barometric Pressure: Manual: 760.00 mmHg
 Relative Humidity: Cell A - Man: 100.0%
 Flow Rate: Auto: 9.88
 Ambient Temp: Manual: 23.0 °C.

CELL A INFORMATION:

Sample Type: pkg: 0.4 mm
 Test Mode: Continuous
 Control Params: Infinite
 ExamMinutes: 30
 Individual Zero: Use Last: 5.8741 E-5
 Conditioning: Disabled
 Cycles Complete: 7
 Current Status: Test Done
 Started Testing: 12/28/2011 8:36:48 AM
 Elapsed Time: 7:29

TEST RESULTS

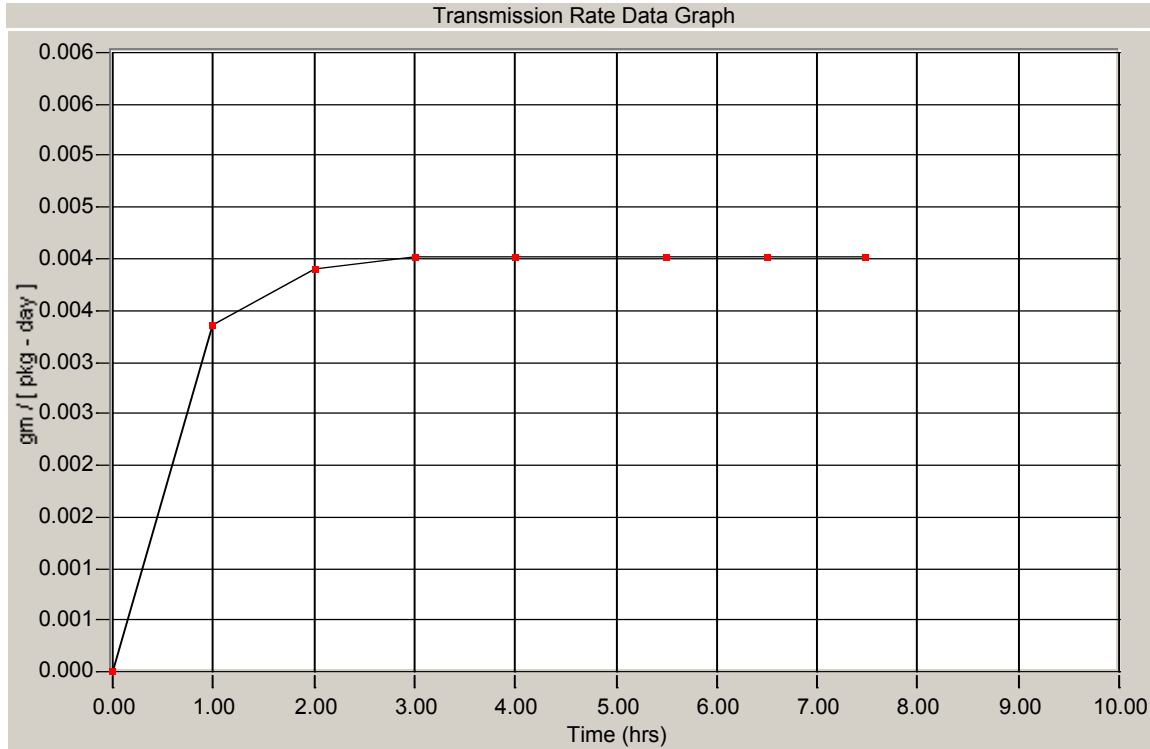
IN SELECTED UNITS

IN STANDARD UNITS

Transmission Rate: 4.0152 E-3 gm / [pkg - day]
 Permeation: 1.6061 E-3 gm-mm/[pkg-day] 0.063231 gm - mil / [pkg - day]

DATA POINTS

Time	Rate/Event	Time	Rate/Event	Time	Rate/Event	Time	Rate/Event
0:00	Test	0:59	3.3558 E-3	1:59	3.9040 E-3	2:59	4.0183 E-3
3:59	4.0155 E-3	5:29	4.0151 E-3	6:29	4.0154 E-3	7:29	4.0152 E-3
7:31	Complete						



MOCON PERMATRAN-W® 3/33 - Single Test Report

Material Id: <24d> Test Number: <D40 Injection-molded Tube with EVOH Barrier & Shoulder>
 Using Method: ASTM F1249, Calibrated: 11/15/2011 3:30:55 PM

MODULE INFORMATION:

Module 3, Serial Number: MG_01599
 Setup Name: fault Setup
 Temp Setpoint/Actual: Auto: 23.0 / 23.1 °C.
 Barometric Pressure: Manual: 760.00 mmHg
 Relative Humidity: Cell A - Man: 100.0%
 Flow Rate: Auto: 9.84

 Ambient Temp: Manual: 23.0 °C.

CELL A INFORMATION:

Sample Type: pkg: 0.4 mm
 Test Mode: Continuous
 Control Params: Infinite
 ExamMinutes: 30
 Individual Zero: Use Last: 5.8741 E-5
 Conditioning: Disabled
 Cycles Complete: 7
 Current Status: Test Done
 Started Testing: 12/29/2011 8:04:50 AM
 Elapsed Time: 7:30

TEST RESULTS

IN SELECTED UNITS

IN STANDARD UNITS

Transmission Rate:	4.0845 E-3	gm / [pkg - day]		
Permeation:	1.6338 E-3	gm - mm / [pkg - day]	0.064323	gm - mil / [pkg - day]

DATA POINTS

Time	Rate/Event	Time	Rate/Event	Time	Rate/Event	Time	Rate/Event
0:00	Test	1:00	3.3954 E-3	2:00	3.9233 E-3	3:00	4.1238 E-3
4:00	4.1171 E-3	5:30	4.0678 E-3	6:30	4.0790 E-3	7:30	4.0845 E-3
7:34	Complete						

