DUPONT™ TYVEK® 1073B AND 1059B TRANSITION PROTOCOL MATERIALS

SPECIFICATION PROPERTIES

Table I. Specification properties of DuPont™ Tyvek® (metric units)

Property	Comparable Test Method	Units	Current Tyvek® 1073B	Transition Protocol Target Value Tyvek® 1073B	1073B Transition Protocol Typical Value	Current Tyvek® 1059B	Transition Protocol Target Value Tyvek® 1059B	1059B Transition Protocol Typical Value
Basis Weight	ASTM D3776[1] EN ISO 536[1]	g/m^2	74.7 [71.2–78.0]	74.7 [71.2–78.0]	74.7 [71.2–78.0]	64.5 [61.7–67.1]	64.5 [61.7–67.1]	64.5 [61.7–67.1]
Delamination	ASTM D2724[2]	N/2.54 cm	2.3 [1.6–3.1]	2.3 [1.5–*]	2.6 [1.8–3.6]	2.2 [1.5–2.9]	2.3 [1.5–*]	2.6 [1.8–3.6]
Gurley Hill Porosity	TAPPI T460[1] ISO 5636-5[3]	sec/100 cc	22 [8–36]	~22 [8–36]	22 [8–36]	20 [8–36]	~20 [8–36]	22 [8–36]

Notes: 1073B and 1059B Transition Protocol typical values represent data from 200 and 100 rolls, respectively, across different line and polymer combinations from a limited number of manufacturing campaigns. Values will be refreshed, as necessary, upon data collection from additional campaigns and long-term variability discernment. Specification properties are controlled to a nominal value and released within specifications. The customer is responsible for determining that Tyvek® is suitable for the intended application. The ranges represent the controlled minimum and maximum values in which the product is released. Specification properties are typical values based on roll averages, with samples taken uniformly across the sheet. These properties are representative for uncoated Tyvek® as sold by DuPont. Any downstream operations, such as coatings applied by sterile packaging manufacturers (SPMs), may change these values.

*Based on customer feedback, upper limit was not specified.

1. Modified sample size.
2. Modified for speed and gauge length.
3. Modified for sealing fluid characteristics.

Table II. Specification properties of DuPont™ Tyvek® (English units)

Property	Comparable Test Method	Units	Current Tyvek® 1073B	Transition Protocol Target Value Tyvek® 1073B	1073B Transition Protocol Typical Value	Current Tyvek® 1059B	Transition Protocol Target Value Tyvek® 1059B	1059B Transition Protocol Typical Value
Basis Weight	ASTM D3776[1] EN ISO 536[1]	oz/yd^2	2.20 [2.10–2.30]	2.20 [2.10–2.30]	2.20 [2.10–2.30]	1.90 [1.82–1.98]	1.90 [1.82–1.98]	1.90 [1.82–1.98]
Delamination	ASTM D2724[2]	$lb_f/in.$	0.5 [0.4–0.7]	0.5 [0.3–*]	0.6 [0.4–0.8]	0.5 [0.3–0.7]	0.5 [0.3–*]	0.6 [0.4–0.8]
Gurley Hill Porosity	TAPPI T460[1] ISO 5636-5[3]	sec/100 cc	22 [8–36]	~22 [8–36]	22 [8–36]	20 [8–36]	~20 [8–36]	22 [8–36]

Notes: 1073B and 1059B Transition Protocol typical values represent data from 200 and 100 rolls, respectively, across different line and polymer combinations from a limited number of manufacturing campaigns. Values will be refreshed, as necessary, upon data collection from additional campaigns and long-term variability discernment. Specification properties are controlled to a nominal value and released within specifications. The customer is responsible for determining that Tyvek® is suitable for the intended application. The ranges represent the controlled minimum and maximum values in which the product is released. Specification properties are typical values based on roll averages, with samples taken uniformly across the sheet. These properties are representative for uncoated Tyvek® as sold by DuPont. Any downstream operations, such as coatings applied by sterile packaging manufacturers (SPMs), may change these values.

*Based on customer feedback, upper limit was not specified.

1. Modified sample size.
2. Modified for speed and gauge length.
3. Modified for sealing fluid characteristics.

For more information about DuPont™ Tyvek® for medical and pharmaceutical packaging and to find out how we can help you with packaging and regulatory compliance, call us today at 1.800.44.TYVEK or visit us at www.MedicalPackaging.DuPont.com.

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DUPONT™ TYVEK® 1073B AND 1059B TRANSITION PROTOCOL MATERIALS

MISCELLANEOUS PROPERTIES – METRIC UNITS

Table I. Miscellaneous properties of DuPont™ Tyvek® (metric units)

Property	Comparable Test Method	Units	Current Typical Value Tyvek® 1073B	Transition Protocol Target Value Tyvek® 1073B	1073B Transition Protocol Typical Value	Current Typical Value Tyvek® 1059B	Transition Protocol Target Value Tyvek® 1059B	1059B Transition Protocol Typical Value
Microbial Barrier	ASTM F1608 ASTM F2638	LRV % pMax	›5 ‹0.3	›5 ‹0.3	›5 ‹0.3	›4 ‹0.5	›4 ‹0.5	›4 ‹0.5
Bendtsen Air Permeability	ISO 5636-3	mL/min	572	572	513	671	671	557
Moisture Vapor Transmission Rate	TAPPI T523[1]	$g/m^2/24$ hr	1615	›1600	›1600	1640	›1600	›1600
Hydrostatic Head	AATCC TM 127 EN 20811[2]	cm H_2O	147	147	159	145	145	157
Tensile Strength, MD	ASTM D5035[3] EN ISO 1924-2[3]	N/2.54 cm	196	196	221	169	169	190
Tensile Strength, CD	ASTM D5035[3] EN ISO 1924-2[3]	N/2.54 cm	200	200	219	169	169	185
Elongation, MD	ASTM D5035[3] EN ISO 1924-2[3]	%	20	20	20	19	19	19
Elongation, CD	ASTM D5035[3] EN ISO 1924-2[3]	%	24	24	24	23	23	23
Elmendorf Tear, MD	ASTM D1424 EN 21974	N	3.3	3.3	3.2	2.8	2.8	3.0
Elmendorf Tear, CD	ASTM D1424 EN 21974	N	3.5	3.5	4.0	3.0	3.0	3.8
Mullen Burst	ASTM D774 ISO 2758	kPa	1213	1213	1234	1055	1055	1034
Spencer Puncture	ASTM D3420[4]	J/m^2	8756	8756	10324	6830	6830	7746
Opacity	TAPPI T425 ISO 2471[5]	%	91	91	92	89	89	92
Thickness (Individual)*	ASTM D1777[6] EN 20534[7] EN ISO 534	µm	178	178	199	157	157	178

Notes: 1073B and 1059B Transition Protocol typical values represent data across different line and polymer combinations from a limited number of manufacturing campaigns. Values will be refreshed, as necessary, upon data collection from additional campaigns and long-term variability discernment. Miscellaneous properties represent typical values based on roll averages, except for thickness (individual), with samples taken uniformly across the sheet. Thickness (individual) typical values are based on a population of pooled individual data points from multiple rolls. Miscellaneous properties are not controlled in the process, and therefore, are subject to slight changes from "normal" process drift. Customers must conduct their own tests to ensure suitability for the intended application. These properties are representative for uncoated Tyvek® as sold by DuPont. Any downstream operations, such as coatings applied by sterile packaging manufacturers (SPMs), may change these values.

*Thickness variability target is equal to, or less than, incumbent products.

MD = machine direction; CD = cross direction; LRV = log reduction value

1. Test conditions: 23°C, 85% RH.
2. Rate of use: 60 cm H_2O/min.
3. Modified for speed and gauge length.
4. Modified for 9/16-in. (14.28-mm) probe.
5. Modified for different backing standards, area and illumination.
6. 7.15 psi, 0.625-in. diameter presser foot.
7. Surface 2 cm^2, pressure 14.5 psi (100 kPa).

For more information about DuPont™ Tyvek® for medical and pharmaceutical packaging and to find out how we can help you with packaging and regulatory compliance, call us today at 1.800.44.TYVEK or visit us at www.MedicalPackaging.DuPont.com.

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DUPONT™ TYVEK® 1073B AND 1059B TRANSITION PROTOCOL MATERIALS

MISCELLANEOUS PROPERTIES – ENGLISH UNITS

Table I. Miscellaneous properties of DuPont™ Tyvek® (English units)

Property	Comparable Test Method	Units	Current Typical Value Tyvek® 1073B	Transition Protocol Target Value Tyvek® 1073B	1073B Transition Protocol Typical Value	Current Typical Value Tyvek® 1059B	Transition Protocol Target Value Tyvek® 1059B	1059B Transition Protocol Typical Value
Microbial Barrier	ASTM F1608 ASTM F2638	LRV % pMax	›5 ‹0.3	›5 ‹0.3	›5 ‹0.3	›4 ‹0.5	›4 ‹0.5	›4 ‹0.5
Bendtsen Air Permeability	ISO 5636-3	mL/min	572	572	513	671	671	557
Moisture Vapor Transmission Rate	TAPPI T523[1]	$g/m^2/24$ hr	1615	›1600	›1600	1640	›1600	›1600
Hydrostatic Head	AATCC TM 127 EN 20811[2]	in. H_2O	58	58	63	57	57	62
Tensile Strength, MD	ASTM D5035[3] EN ISO 1924-2[3]	lb_f/in.	44	44	50	38	38	43
Tensile Strength, CD	ASTM D5035[3] EN ISO 1924-2[3]	lb_f/in.	45	45	49	38	38	42
Elongation, MD	ASTM D5035[3] EN ISO 1924-2[3]	%	20	20	20	19	19	19
Elongation, CD	ASTM D5035[3] EN ISO 1924-2[3]	%	24	24	24	23	23	23
Elmendorf Tear, MD	ASTM D1424 EN 21974	lb_f	0.7	0.7	0.7	0.6	0.6	0.7
Elmendorf Tear, CD	ASTM D1424 EN 21974	lb_f	0.8	0.8	0.9	0.7	0.7	0.8
Mullen Burst	ASTM D774 ISO 2758	psi	176	176	179	153	153	150
Spencer Puncture	ASTM D3420[4]	in.-lb_f/in.^{2}	50	50	59	39	39	44
Opacity	TAPPI T425 ISO 2471[5]	%	91	91	92	89	89	92
Thickness (Individual)*	ASTM D1777[6] EN 20534[7] EN ISO 534	mils	7.0	7.0	7.8	6.2	6.2	7.0

Notes: 1073B and 1059B Transition Protocol typical values represent data across different line and polymer combinations from a limited number of manufacturing campaigns. Values will be refreshed, as necessary, upon data collection from additional campaigns and long-term variability discernment. Miscellaneous properties represent typical values based on roll averages, except for thickness (individual), with samples taken uniformly across the sheet. Thickness (individual) typical values are based on a population of pooled individual data points from multiple rolls. Miscellaneous properties are not controlled in the process, and therefore, are subject to slight changes from "normal" process drift. Customers must conduct their own tests to ensure suitability for the intended application. These properties are representative for uncoated Tyvek® as sold by DuPont. Any downstream operations, such as coatings applied by sterile packaging manufacturers (SPMs), may change these values.

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