

# Adhesion Performance Comparison Table for DuPont™ Bynel® Resins

## TYPICAL ADHESION PERFORMANCE IN A MELT COEXTRUSION

Legend:

[0] = Standard Performance

[+] = High Performance

Notes:

1.) resin is intended to be used in blending and not pure

2.) resin may be used pure or in blends

3.) see below for explanation

Grade	Notes	Melt Flow	Melt Point (deg. C)	Vicat Point (deg. C)	FDA (21 CFR xxx)	EVOH (long) (See note 3)	EVOH (short) (See note 3)	Polyamide (nylon)	Polyethylene	Polypropylene	Polystyrene	Polyester	Ionomer
<b>Series 1100 - Modified Ethylene Vinyl Acetate</b>													
Bynel® 1123		6.7	74	50	177.1350			[0]	[+]	[0]	[0]	[0]	[+]
Bynel® 1124		25	70	49	177.1350			[0]	[+]	[0]	[0]	[0]	[+]
<b>Series 2000 - Acid Modified Ethylene Acrylate</b>													
Bynel® 2002		10	91	60	177.1330(b)			[+]	[0]				[+]
Bynel® 2022		35	87	58	177.1330(b)			[+]	[0]				[+]
<b>Series 2100 - Anhydride Modified Ethylene Acrylate</b>													
Bynel® 21E533		7.7	83	50	175.105	[+]	[+]	[+]	[+]	[0]	[0]	[+]	[+]
Bynel® 21E781		2	97		175.105	[+]	[+]	[+]	[+]				[+]
Bynel® 21E810		1.9	94	57	175.105	[0]	[0]	[+]	[+]	[0]		[+]	[+]
Bynel® 21E830		5	93		175.105	[0]	[0]	[+]	[+]	[0]		[+]	[+]
<b>Series 2200 - Modified Ethylene Acrylate</b>													
Bynel® 22E757		8	92	54	177.1340				[+]	[0]		[+]	[0]
Bynel® 22E780		2	91	48	177.1340				[+]	[0]		[+]	[0]
Bynel® 22E804		5	93	51	177.1340				[+]	[0]		[+]	[0]



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Grade	Notes	Melt Flow	Melt Point (deg. C)	Vicat Point (deg. C)	FDA (21 CFR xxx)	EVOH (long) (Note 3)	EVOH (short) (Note 3)	Polyamide (nylon)	Polyethylene	Polypropylene	Polystyrene	Polyester	Ionomer
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**Series 3000 - Anhydride Modified Ethylene Vinyl Acetate**

Bynel® 30E670		0.8	96	84	175.105			[+]	[+]				[0]
Bynel® 30E671		2.1	99	81	175.105			[+]	[+]				[0]
Bynel® 30E753		2.1	92	65	175.105				[+]				
Bynel® 30E783		5.7	92	67	175.105			[+]	[+]				[0]

**Series 3100 - Acid / Acrylate Modified Ethylene Vinyl Acetate**

Bynel® 3101		3.2	87	65	175.1350			[0]	[+]	[0]	[0]	[0]	[+]
Bynel® 3126		8.1	87	60	175.1350			[0]	[+]	[0]	[0]	[0]	[+]

**Series 3800 - Anhydride Modified Ethylene Vinyl Acetate**

Bynel® E418		10.9	74	42	175.105	[0]	[0]	[+]	[0]	[0]	[+]	[+]	[+]
Bynel® 3810		2.6	75	49	175.105	[0]	[0]	[+]	[0]	[0]	[+]	[0]	[0]
Bynel® 3859		4.3	76	62	175.105	[0]	[0]	[+]	[0]	[0]	[+]	[0]	[0]
Bynel® 3860		5.7	74	48	175.105	[0]	[0]	[+]	[0]	[0]	[0]	[0]	[+]
Bynel® 3861		2	80	56	175.105	[0]	[0]	[+]	[0]	[0]	[0]	[0]	[+]

**Series 3900 - Anhydride Modified Ethylene Vinyl Acetate**

Bynel® 3930		0.85	99	82	177.1350 / 175.105	[0]	[0]	[+]	[+]				[0]
Bynel® 39E660		2.9	95	72	177.1350 / 175.105			[+]	[+]	[0]	[0]	[0]	[0]

**Series 4000 - Anhydride Modified High Density Polyethylene**

Bynel® 4033	1)	2	135	128	175.105	[+]	[+]	[+]	[+]				
Bynel® 40E529		3.5	135	119	175.105	[+]	[0]	[+]	[+]				



Grade	Notes	Melt Flow	Melt Point (deg. C)	Vicat Point (deg. C)	FDA (21 CFR xxx)	EVOH (long) (Note 3)	EVOH (short) (Note 3)	Polyamide (nylon)	Polyethylene	Polypropylene	Polystyrene	Polyester	lonomer
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**Series 4100 - Anhydride Modified Linear Low Density Polyethylene**

Bynel® 4104		1.1	125	110	175.105	[+]	[0]	[+]	[+]				[0]
Bynel® 4105		4	125	105	175.105	[+]	[0]	[+]	[+]				[0]
Bynel® 4109		3.1	126	87	175.105	[+]	[+]	[+]	[+]				[+]
Bynel® 4125		2.5	126	109	175.105	[+]	[0]	[+]	[+]				[0]
Bynel® 4140	1)	1.5	121	102	175.105	[+]	[+]	[+]	[+]				[0]
Bynel® 4157		3	127	93	175.105	[+]	[+]	[+]	[+]				[0]
Bynel® 4164	2)	1.2	127	110	175.105	[+]	[+]	[+]	[+]				[0]
Bynel® 41E556		3.4	126	105	175.105	[+]	[0]	[+]	[+]				[0]
Bynel® 41E687		1.7	119	84	175.105	[+]	[+]	[+]	[+]				[+]
Bynel® 41E710	1)	2.7	115	103	175.105	[+]	[+]	[+]	[+]				[0]
Bynel® 41E754		0.9	126	101	175.105	[+]	[+]	[+]	[+]				[0]
Bynel® 41E755		4.2	125	100	175.105			[+]	[+]				
Bynel® 41E762		2.5	127	100	175.105	[+]	[+]	[+]	[+]				[0]
Bynel® 41E766		2.2	121	91	175.105	[+]	[+]	[+]	[+]				[0]
Bynel® 41E850		1	120	88	175.105	[+]	[+]	[+]	[+]				[0]
Bynel® 41E865		4.1	111	100	175.105	[+]	[+]	[+]	[+]		[+]		
Bynel® 41E871	2)	1.9	121	100	175.105	[+]	[+]	[+]	[+]				

**Series 4200 - Anhydride Modified Low Density Polyethylene**

Bynel® 4206		2.5	102	75	175.105	[+]	[+]	[+]	[+]				[0]
Bynel® 4208		0.4	108	86	175.105	[+]	[+]	[+]	[+]				[0]
Bynel® 4288		4.7	104	86	175.105	[+]	[+]	[+]	[+]				[0]
Bynel® 42E703		6.4	105	80	175.105	[+]	[+]	[+]	[+]				[0]



Grade	Notes	Melt Flow	Melt Point (deg. C)	Vicat Point (deg. C)	FDA (21 CFR xxx)	EVOH (long) (Note 3)	EVOH (short) (Note 3)	Polyamide (nylon)	Polyethylene	Polypropylene	Polystyrene	Polyester	Ionomer
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**Series 5000 - Anhydride Modified Polypropylene**

Bynel@ 50E571		3.5	156	125	175.105	[+]	[0]	[+]		[+]			
Bynel@ 50E662		4	150	130	175.105	[+]	[0]	[+]		[+]			
Bynel@ 50E725		3	144	114	175.105	[+]	[+]	[+]		[+]			
Bynel@ 50E739		6	142	107	175.105	[+]	[+]	[+]		[+]			
Bynel@ 50E803	1)	470	135	112	175.105	[+]	[+]	[+]		[+]			
Bynel@ 50E806	2)	25	140	100	175.105	[+]	[+]	[+]		[+]			

<b>NOTE 3)</b>		
<b>EVOH Processing Time</b>	Relative "extrusion processing time" for coextrusion adhesion generation	L = Long process time S = Short process time
<b>Primary Process</b>	<b>Secondary Process</b>	<b>Process Time Type</b>
Blown Film (standard)		S or L (design dependent)
Blown Film (water quench)		S
Cast Film		S
Coextrusion Coating / Laminating		S
Sheet Extrusion		L
Sheet Extrusion	Melt Phase Thermoforming	L
Sheet Extrusion	Solid Phase Thermoforming	S
Tubing		L
Extrusion Blow Molding		L

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