

Vydyne® 840F

polyamide 66/6 copolymer



Vydyne 840F is a PA66-based copolymer that features high melt strength, shear thinning behavior, high tensile strength, ductility, and slow crystallinity that matches crystallization temperatures/ rates very close to that of ethylenes. The combination of properties exhibited by Vydyne 840F make it a good candidate for a number of applications such as numerous film uses, sheeting,

and monofilament. The slow crystallization behavior coupled with the melting point ~ 215-220°C and great mechanical properties makes this material extremely useful for outside layers or internal layers of the multilayer film. This material further exhibits a very high elongation to break (> 500%) allowing for high draw ratios for thermoforming or when orienting the film.

General					
Material Status	• Commercial: Active				
Availability	• Asia Pacific	• Europe	• North America		
Features	• Chemical Resistant • High Melt Stability	• High Melt Strength • High Strength	• High Toughness • Puncture Resistant		
Uses	• Industrial Applications • Monofilaments • Multilayer Film	• Profiles • Rods • Sheet	• Tubing • Vacuum Bagging Film		
Agency Ratings	• ASTM D4066 PA0111 • ASTM D6779 PA0111 • EC 1935/2004	• EU 10/2011 • EU 2023/2006 • FDA 21 CFR 177.1500	• MIL M-20693B		
RoHS Compliance	• RoHS Compliant				
Appearance	• Natural Color				
Forms	• Pellets				
Processing Method	• Blown Film • Cast Film	• Extrusion • Profile Extrusion			
Physical	Dry	Conditioned	Unit	Test Method	
Density	1.14	--	g/cm ³	ISO 1183	
Bulk Density	674	--	g/l	ASTM D1895	
Moisture Content	0.10	--	%	ASTM D6869	
Relative Viscosity					
(Formic Acid)	115 to 145	--		ASTM D789	
(Sulphuric Acid)	3.80 to 4.10	--		ISO 307	

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Films	Dry	Conditioned	Unit	Test Method
Film Puncture Force				ASTM F1306
25 µm, Biaxially Oriented Film	--	> 2300	N	
Secant Modulus				ASTM D882
MD : 25 µm, Biaxially Oriented Film	--	2900	MPa	
MD : 38 µm, Cast Film	--	400	MPa	
TD : 25 µm, Biaxially Oriented Film	--	3000	MPa	
TD : 38 µm, Cast Film	--	400	MPa	
Tensile Strength				ASTM D882
MD : Break, 25 µm, Biaxially Oriented Film	--	240	MPa	
MD : Break, 38 µm, Cast Film	--	100	MPa	
TD : Break, 25 µm, Biaxially Oriented Film	--	270	MPa	
TD : Break, 38 µm, Cast Film	--	100	MPa	
Tensile Elongation				ASTM D882
MD : Break, 25 µm, Biaxially Oriented Film	--	140	%	
MD : Break, 38 µm, Cast Film	--	> 500	%	
TD : Break, 25 µm, Biaxially Oriented Film	--	130	%	
TD : Break, 38 µm, Cast Film	--	> 500	%	
Dart Drop Impact (38 µm, Cast Film)	--	> 2000	g	ASTM D1709A
Elmendorf Tear Strength				ASTM D1922
MD : 38 µm, Cast Film	--	140	g	
TD : 38 µm, Cast Film	--	150	g	
Free Shrinkage				ASTM D1204
MD, 160°C, Biaxially Oriented Film	--	2.0	%	
TD, 160°C, Biaxially Oriented Film	--	1.0	%	
Thermal	Dry	Conditioned	Unit	Test Method
Melting Temperature	220	--	°C	ISO 11357-3
Extrusion	Dry		Unit	
Drying Temperature		70 to 80	°C	
Drying Time		0.0 to 4.0	hr	

Extrusion Notes

Recommended Extrusion Conditions:

Melt Point: 220°C

Cylinder Temperature: 230°C to 275°C

Die Temperature: 240°C

Melt Pressure: 3 to 17 MPa

Blow Film Bath Temperature: 5°C to 20°C

Chill Roll Temperature (Cast Film): 20°C to 40°C (clear), 80°C to 100°C (high stable)

Recommended Process Moisture: 0.03 to 0.08%

Screw Design: General Purpose or Barrier

Notes

Typical properties: these are not to be construed as specifications.

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