



Vydyne® 840F

Ascend Performance Materials Operations LLC - Polyamide 66/6 Copolymer

Monday, November 4, 2019

General Information

Product Description

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
Additive	• Heat Stabilizer		
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	

ASTM & ISO Properties ¹

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
Films	Dry	Conditioned	Unit	Test Method
Film Puncture Force				ASTM F1306
1.0 mil, Biaxially Oriented Film	--	> 517	lbf	
Secant Modulus - MD				ASTM D882
1.0 mil, Biaxially Oriented Film	--	421000	psi	
1.5 mil, Cast Film	--	58000	psi	
Secant Modulus - TD				ASTM D882
1.0 mil, Biaxially Oriented Film	--	435000	psi	
1.5 mil, Cast Film	--	58000	psi	
Tensile Strength - MD				ASTM D882
Break, 0.98 mil, Biaxially Oriented Film	--	34800	psi	
Break, 1.5 mil, Cast Film	--	14500	psi	

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Films	Dry	Conditioned	Unit	Test Method
Tensile Strength - TD				ASTM D882
Break, 0.98 mil, Biaxially Oriented Film	--	39200	psi	
Break, 1.5 mil, Cast Film	--	14500	psi	
Tensile Elongation - MD				ASTM D882
Break, 0.98 mil, Biaxially Oriented Film	--	140	%	
Break, 1.5 mil, Cast Film	--	> 500	%	
Tensile Elongation - TD				ASTM D882
Break, 0.98 mil, Biaxially Oriented Film	--	130	%	
Break, 1.5 mil, Cast Film	--	> 500	%	
Dart Drop Impact				ASTM D1709A
1.5 mil, Cast Film	--	> 2000	g	
Elmendorf Tear Strength - MD				ASTM D1922
1.5 mil, Cast Film	--	140	g	
Elmendorf Tear Strength - TD				ASTM D1922
1.5 mil, Cast Film	--	150	g	
Free Shrinkage				ASTM D1204
MD, 320°F, Biaxially Oriented Film	--	2.0	%	
TD, 320°F, Biaxially Oriented Film	--	1.0	%	
Thermal	Dry	Conditioned	Unit	Test Method
Melting Temperature	428	--	°F	ISO 11357-3

Processing Information

Extrusion	Dry	Unit
Drying Temperature	158 to 176	°F
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

¹ Typical properties: these are not to be construed as specifications.