

## Ascend Performance Materials Vydyn<sup>®</sup> M344 BLK Nylon 66, Flame Retardant, DAM

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, Unreinforced, Flame Retardant

### Material Notes:

Vydyn<sup>®</sup> M344 BLK is a halogenated, unfilled, flame-retardant PA66/6 copolymer designed with excellent strength and toughness. It is lubricated for machine feed and easy mold release and has Underwriters Laboratories UL 94 flammability classification of V-0 at 0.4 mm (0.016") thick. Availability: Asia Pacific Europe North America Additive: Halogen Lubricant Features: Ductile Flame Retardant Good Crack Resistance Good Mold Release Good Toughness Halogenated High Elongation Ignition Resistant Low Density Lubricated Uses: Appliances Automotive Electronics Bobbins Connectors Electrical Housing Electrical Parts Electrical/Electronic Applications Fasteners Industrial Applications Lighting Applications Living Hinges Printed Circuit Boards Switches Appearance: Black Forms: Pellets Processing Method: Injection Molding Information provided by Ascend Performance Materials.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Ascend-Performance-Materials-Vydyn-M344-BLK-Nylon-66-Flame-Retardant-DAM.php](http://www.lookpolymers.com/polymer_Ascend-Performance-Materials-Vydyn-M344-BLK-Nylon-66-Flame-Retardant-DAM.php)

Physical Properties	Metric	English	Comments
Density	1.27 g/cc	0.0459 lb/in <sup>3</sup>	ISO 1183
Water Absorption	0.80 % @Time 86400 sec	0.80 % @Time 24.0 hour	ISO 62
Moisture Absorption at Equilibrium	1.9 %	1.9 %	50% RH; ISO 62
Linear Mold Shrinkage, Flow	0.013 cm/cm @Diameter 2.00 mm	0.013 in/in @Diameter 0.0787 in	ISO 294-4
Linear Mold Shrinkage, Transverse	0.018 cm/cm @Diameter 2.00 mm	0.018 in/in @Diameter 0.0787 in	ISO 294-4

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	60.0 MPa	8700 psi	ISO 527-2
Elongation at Break	35 %	35 %	ISO 527-2
Elongation at Yield	5.2 %	5.2 %	ISO 527-2
Tensile Modulus	3.50 GPa	508 ksi	ISO 527-2
Flexural Strength	90.0 MPa	13100 psi	ISO 178
Flexural Modulus	3.00 GPa	435 ksi	ISO 178
Poissons Ratio	0.40	0.40	ISO 527-2
Izod Impact, Notched (ISO)	5.00 kJ/m <sup>2</sup>	2.38 ft-lb/in <sup>2</sup>	ISO 180

Mechanical Properties	Metric	English	Comments
Charpy Impact Unnotched	@Temperature -30.0 °C	@Temperature -22.0 °F	ISO 179/1eU
	NB	NB	ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.520 J/cm <sup>2</sup>	2.47 ft-lb/in <sup>2</sup>	ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	0.550 J/cm <sup>2</sup>	2.62 ft-lb/in <sup>2</sup>	ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	10.0 µm/m-°C	5.56 µin/in-°F	ISO 11359-2
	@Thickness 2.00 mm, Temperature 23.0 - 55.0 °C	@Thickness 0.0787 in, Temperature 73.4 - 131 °F	
CTE, linear, Transverse to Flow	10.0 µm/m-°C	5.56 µin/in-°F	ISO 11359-2
	@Thickness 2.00 mm, Temperature 23.0 - 55.0 °C	@Thickness 0.0787 in, Temperature 73.4 - 131 °F	
Melting Point	250 °C	482 °F	ISO 11357-3
Deflection Temperature at 0.46 MPa (66 psi)	186 °C	367 °F	Unannealed; ISO 75-2/B
Deflection Temperature at 1.8 MPa (264 psi)	65.0 °C	149 °F	Unannealed; ISO 75-2/A
UL RTI, Electrical	65.0 °C	149 °F	UL 746
	@Thickness 0.400 mm	@Thickness 0.0157 in	
	130 °C	266 °F	UL 746
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	130 °C	266 °F	UL 746
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	130 °C	266 °F	UL 746
	@Thickness 3.00 mm	@Thickness 0.118 in	
UL RTI, Mechanical with Impact	65.0 °C	149 °F	UL 746
	@Thickness 0.400 mm	@Thickness 0.0157 in	
	65.0 °C	149 °F	UL 746
	@Thickness 0.750 mm	@Thickness 0.0295 in	

Thermal Properties	Metric	English	Comments
	95.0 °C @Thickness 1.50 mm	203 °F @Thickness 0.0591 in	UL 746
	95.0 °C @Thickness 3.00 mm	203 °F @Thickness 0.118 in	UL 746
UL RTI, Mechanical without Impact	65.0 °C @Thickness 0.400 mm	149 °F @Thickness 0.0157 in	UL 746
	95.0 °C @Thickness 0.750 mm	203 °F @Thickness 0.0295 in	UL 746
	95.0 °C @Thickness 1.50 mm	203 °F @Thickness 0.0591 in	UL 746
	95.0 °C @Thickness 3.00 mm	203 °F @Thickness 0.118 in	UL 746
Flammability, UL94	V-0 @Thickness 0.400 mm	V-0 @Thickness 0.0157 in	
	V-0 @Thickness 0.750 mm	V-0 @Thickness 0.0295 in	
	V-0 @Thickness 1.50 mm	V-0 @Thickness 0.0591 in	
	V-0 @Thickness 3.00 mm	V-0 @Thickness 0.118 in	
Oxygen Index	30 %	30 %	ISO 4589-2
Glow Wire Test	700 °C @Thickness 0.750 mm	1290 °F @Thickness 0.0295 in	Ignition Temperature; IEC 60695-2-13
	700 °C @Thickness 1.50 mm	1290 °F @Thickness 0.0591 in	Ignition Temperature; IEC 60695-2-13
	725 °C @Thickness 3.00 mm	1340 °F @Thickness 0.118 in	Ignition Temperature; IEC 60695-2-13
	960 °C @Thickness 0.750 mm	1760 °F @Thickness 0.0295 in	Flammability Index; IEC 60695-2-12
	960 °C	1760 °F	Flammability Index; IEC 60695-2-12

Thermal Properties	@Thickness 1.50 mm Metric	@Thickness 0.0591 in English	Comments
	960 °C	1760 °F	Flammability Index; IEC 60695-2-12
	@Thickness 3.00 mm	@Thickness 0.118 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+10 ohm-cm @Thickness 0.750 mm	1.00e+10 ohm-cm @Thickness 0.0295 in	IEC 60093
Dielectric Strength	26.0 kV/mm @Thickness 1.00 mm	660 kV/in @Thickness 0.0394 in	IEC 60243
Arc Resistance	60 - 119 sec @Thickness 3.00 mm	60 - 119 sec @Thickness 0.118 in	ASTM D495
Comparative Tracking Index	400 - 599 V @Thickness 3.00 mm	400 - 599 V @Thickness 0.118 in	IEC 60112
Hot Wire Ignition, HWI	>= 120 sec @Thickness 0.750 mm	>= 120 sec @Thickness 0.0295 in	UL 746
	>= 120 sec @Thickness 1.50 mm	>= 120 sec @Thickness 0.0591 in	UL 746
	>= 120 sec @Thickness 3.00 mm	>= 120 sec @Thickness 0.118 in	UL 746
High Amp Arc Ignition, HAI	>= 120 arcs @Thickness 0.750 mm	>= 120 arcs @Thickness 0.0295 in	UL 746
	>= 120 arcs @Thickness 1.50 mm	>= 120 arcs @Thickness 0.0591 in	UL 746
	>= 120 arcs @Thickness 3.00 mm	>= 120 arcs @Thickness 0.118 in	UL 746
High Voltage Arc-Tracking Rate, HVTR	10.1 - 25.4 mm/min	0.398 - 1.00 in/min	UL 746

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	240 - 270 °C	464 - 518 °F	
Middle Barrel Temperature	240 - 270 °C	464 - 518 °F	
Front Barrel Temperature	240 - 270 °C	464 - 518 °F	

Processing Properties	Metric	English	Comments
Melt Temperature	250 - 270 °C	482 - 518 °F	
Mold Temperature	65.0 - 95.0 °C	149 - 203 °F	
Drying Temperature	80.0 °C	176 °F	
Dry Time	4.00 hour	4.00 hour	

Descriptive Properties	Value	Comments
Suggested Max Regrind	25 %	

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