Ascend Performance Materials Vydyne® R513H Black Nylon 66, 13% Glass Reinforced, DAM

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, 10% Glass Fiber Filled

Material Notes:

Vydyne® R513H Black is general-purpose, 13% glass-fiber reinforced, heat-stabilized PA66 resin. Available in black, it is an injection-molding grade that is lubricated for machine feed, flow, and mold release. Glass-reinforced Vydyne resins provide a higher heat distortion temperature, better resistance to creep, high impact, and better dimensional stability when compared with unreinforced PA66. This product has good chemical resistance to a broad range of chemicals, including many aliphatic and aromatic hydrocarbons found in most solvents, gasoline, hydraulic fluids, greases and machine oils. Vydyne R513 Black has tensile strength and modulus properties just below aluminum and zinc and can replace these metals in numerous applications due to an excellent balance of properties. Reduction in production costs, energy consumption and part weight are key advantages of Vydyne glass-reinforced PA66 resins over aluminum and/or zinc die-cast parts. Vydyne R513 Black is heat-stabilized and formulated to minimize the oxidative and thermal degradation of the PA66 polymer when exposed to elevated temperatures for extended periods of time. Vydyne R513H Black provides improved retention of physical properties under exposure to long-term heat. The continuous operating use temperature is 275°F, with short-term peak temperatures as high as 475°F. Availability:Asia PacificEuropeNorth AmericaFiller/Reinforcement:Glass Fiber, 13% Filler by WeightAdditive:Heat StabilizerLubricant Features: Gasoline ResistanceGood Chemical ResistanceGood FlowGood Mold ReleaseGrease ResistantHeat StabilizedHigh RigidityHigh StrengthLubricatedOil ResistantSolvent ResistantUses: Automotive Under the Hood GearsHousings Power/Other ToolsAppearance: BlackForms: PelletsProcessing Method: Injection MoldingInformation provided by Ascend Performance Materials.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Ascend-Performance-Materials-Vydyne-R513H-Black-Nylon-66-13-Glass-Reinforced-DAM.php

Physical Properties	Metric	English	Comments
Density	1.23 g/cc	0.0444 lb/in³	ISO 1183
Water Absorption	1.0 % @Time 86400 sec	1.0 % @Time 24.0 hour	ISO 62
Moisture Absorption at Equilibrium	2.2 %	2.2 %	50% RH; ISO 62
Linear Mold Shrinkage, Flow	0.0050 cm/cm @Diameter 2.00 mm	0.0050 in/in @Diameter 0.0787 in	ISO 294-4
Linear Mold Shrinkage, Transverse	0.010 cm/cm @Diameter 2.00 mm	0.010 in/in @Diameter 0.0787 in	ISO 294-4

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	115 MPa	16700 psi	ISO 527-2
Elongation at Break	3.0 %	3.0 %	ISO 527-2
Tensile Modulus	6.20 GPa	899 ksi	ISO 527-2

Mechanical Properties	Metric	English	Comments
Flexural Strength	165 MPa	23900 psi	ISO 178
Flexural Modulus	5.20 GPa	754 ksi	ISO 178
Poissons Ratio	0.40	0.40	ISO 527
Izod Impact, Notched (ISO)	5.00 kJ/m² @Temperature -30.0 °C	2.38 ft-lb/in² @Temperature -22.0 °F	ISO 180
	5.10 kJ/m² @Temperature 23.0 °C	2.43 ft-lb/in² @Temperature 73.4 °F	ISO 180
Charpy Impact Unnotched	3.10 J/cm² @Temperature -30.0 °C	14.8 ft-lb/in² @Temperature -22.0 °F	ISO 179
	3.80 J/cm² @Temperature 23.0 °C	18.1 ft-lb/in² @Temperature 73.4 °F	ISO 179
Charpy Impact, Notched	0.600 J/cm² @Temperature -30.0 °C	2.86 ft-lb/in² @Temperature -22.0 °F	ISO 179
	0.600 J/cm² @Temperature 23.0 °C	2.86 ft-lb/in² @Temperature 73.4 °F	ISO 179

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	3.00 µm/m-°C @Thickness 2.00 mm, Temperature 23.0 - 55.0 °C	1.67 µin/in-°F @Thickness 0.0787 in, Temperature 73.4 - 131 °F	ISO 11359-2
CTE, linear, Transverse to Flow	11.0 µm/m-°C @Thickness 2.00 mm, Temperature 23.0 - 55.0 °C	6.11 µin/in-°F @Thickness 0.0787 in, Temperature 73.4 - 131 °F	ISO 11359-2
Melting Point	260 °C	500 °F	ISO 11357-3
Deflection Temperature at 0.46 MPa (66 psi)	258 °C	496 °F	Unannealed; ISO 75-2/B
Deflection Temperature at 1.8 MPa (264 psi)	240 °C	464 °F	Unannealed; ISO 75-2/A
UL RTI, Electrical	140 °C @Thickness 0.750 mm	284 °F @Thickness 0.0295 in	UL 746
	140 °C @Thickness 1.50 mm	284 °F @Thickness 0.0591 in	UL 746

Thermal Properties	Metric	English	Comments
	140 °C @Thickness 3.00 mm	284 °F @Thickness 0.118 in	UL 746
UL RTI, Mechanical with Impact	120 °C @Thickness 0.750 mm	248 °F @Thickness 0.0295 in	UL 746
	120 °C @Thickness 1.50 mm	248 °F @Thickness 0.0591 in	UL 746
	120 °C @Thickness 3.00 mm	248 °F @Thickness 0.118 in	UL 746
UL RTI, Mechanical without Impact	125 °C @Thickness 0.750 mm	257 °F @Thickness 0.0295 in	UL 746
	140 °C @Thickness 1.50 mm	284 °F @Thickness 0.0591 in	UL 746
	140 °C @Thickness 3.00 mm	284 °F @Thickness 0.118 in	UL 746
Flammability, UL94	HB @Thickness 0.750 mm	HB @Thickness 0.0295 in	
	HB @Thickness 1.50 mm	HB @Thickness 0.0591 in	
	HB @Thickness 3.00 mm	HB @Thickness 0.118 in	
Oxygen Index	25 %	25 %	ISO 4589-2
Glow Wire Test	675 °C @Thickness 0.750 mm	1250 °F @Thickness 0.0295 in	Flammability Index; IEC 60695-2-12
	675 °C @Thickness 1.50 mm	1250 °F @Thickness 0.0591 in	Flammability Index; IEC 60695-2-12
	675 °C @Thickness 3.00 mm	1250 °F @Thickness 0.118 in	Flammability Index; IEC 60695-2-12
	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

Thermal Properties	Metric	English	Comments
	@Thickness 3.00 mm	@Thickness 0.118 in	ignition temperature; IEC 60695-2-13

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+13 ohm-cm @Thickness 0.750 mm	1.00e+13 ohm-cm @Thickness 0.0295 in	IEC 60093
Dielectric Strength	20.0 kV/mm @Thickness 1.00 mm	508 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	250 - 399 V @Thickness 3.00 mm	250 - 399 V @Thickness 0.118 in	IEC 60112
Hot Wire Ignition, HWI	7.0 - 14 sec @Thickness 0.750 mm	7.0 - 14 sec @Thickness 0.0295 in	UL 746
	7.0 - 14 sec @Thickness 3.00 mm	7.0 - 14 sec @Thickness 0.118 in	UL 746
	15 - 29 sec @Thickness 1.50 mm	15 - 29 sec @Thickness 0.0591 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	280 - 310 °C	536 - 590 °F	
Middle Barrel Temperature	280 - 310 °C	536 - 590 °F	
Front Barrel Temperature	280 - 310 °C	536 - 590 °F	
Nozzle Temperature	280 - 310 °C	536 - 590 °F	

Processing Properties	Metric	English	Comments
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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