

Ascend Performance Materials Vydyne® R220 Nylon 66, 40% mineral reinforced, DAM

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, 40% Mineral Filled

Material Notes:

Vydyne® R220 is a 40% mineral-reinforced PA66 resin formulated for improved impact strength. Available in natural, it is an injection-molding grade formulated to retain the inherent processing advantages of unreinforced PA66 while enhancing rigidity, strength and heat resistance. Vydyne R220 maintains the chemical resistance typical of PA66 to a wide variety of chemicals, gasoline, oils, greases and solvents. Vydyne R220 resin utilizes a unique mineral-reinforced PA66 system developed by Ascend Performance Materials to satisfy the market need for a high-rigidity thermoplastic as an alternative to certain metals. This mineral system provides two key features (1) isotropic behavior-property development in molded parts is usually independent of flow direction. (2) a reduction in the tendency to develop sink marks in heavy cross sections such as molded-in bosses and ribs. While not sink-free, parts made from Vydyne R220 can often permit boss and rib design or wall cross section changes that would not be tolerable in other unreinforced thermoplastic materials. Thus Vydyne R220 resin offers more uniform molded part strength and performance, as well as wider latitude in part design. Vydyne R220 resin is a workhorse of Ascend Performance Materials' full line of mineral-reinforced PA66, providing the best overall balance of properties. Vydyne R220 is heat stabilized and designed to provide increased ductility and reduced melt viscosity vs. unreinforced materials. This ductility improvement results in tougher, more impact-resistant molded parts. The reduction in melt viscosity enhances overall ease of injection-molding, resulting in minor reductions in tensile strength, modulus and heat distortion temperature. Parts manufactured from Vydyne R220 have successfully withstood paint bake oven cycles without significant loss of either dimensional stability or part properties. Availability: Asia Pacific Europe North America Filler/Reinforcement: Mineral, 40% Filler by Weight Additive: Heat Stabilizer Features: Ductile Gasoline Resistance Good Chemical Resistance Good Impact Resistance Good Strength Good Toughness Grease Resistant Heat Stabilized High Heat Resistance High Rigidity Oil Resistant Solvent Resistant Uses: Automotive Exterior Parts Automotive Under the Hood Cams Gears Housings Industrial Applications Power/Other Tools Appearance: Natural Color Forms: Pellets Processing Method: Injection Molding Information provided by Ascend

Order this product through the following link:

http://www.lookpolymers.com/polymer_Ascend-Performance-Materials-Vydyne-R220-Nylon-66-40-mineral-reinforced-DAM.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.48 g/cc	1.48 g/cc	ISO 1183
Water Absorption	1.1 %	1.1 %	24 hrs; ISO 62
Moisture Absorption at Equilibrium	1.6 %	1.6 %	Equilibrium at 50%rh; ISO 62
Linear Mold Shrinkage	0.011 cm/cm	0.011 in/in	ISO 294-4
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Linear Mold Shrinkage, Transverse	0.010 cm/cm	0.010 in/in	ISO 294-4
	@Thickness 2.00 mm	@Thickness 0.0787 in	

Mechanical Properties	Metric	English	Comments
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Tensile Strength, Yield Mechanical Properties	103 MPa Metric	14900 psi English	ISO 527-2 Comments
Elongation at Break	6.0 %	6.0 %	ISO 527-2
Elongation at Yield	1.5 %	1.5 %	ISO 527-2
Tensile Modulus	6.90 GPa	1000 ksi	ISO 527-2
Flexural Strength	124 MPa	18000 psi	ISO 178
Flexural Modulus	6.10 GPa	885 ksi	ISO 178
Poissons Ratio	0.40	0.40	ISO 527-2
Izod Impact, Notched (ISO)	9.00 kJ/m ²	4.28 ft-lb/in ²	ISO 180
Charpy Impact Unnotched	11.0 J/cm ²	52.3 ft-lb/in ²	ISO 179
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	14.0 J/cm ²	66.6 ft-lb/in ²	ISO 179
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.600 J/cm ²	2.86 ft-lb/in ²	ISO 179
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	0.700 J/cm ²	3.33 ft-lb/in ²	ISO 179
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	60.0 µm/m-°C	33.3 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	63.0 µm/m-°C	35.0 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	258 °C	496 °F	ISO 11357-3
Deflection Temperature at 0.46 MPa (66 psi)	222 °C	432 °F	ISO 75-2/B
Deflection Temperature at 1.8 MPa (264 psi)	118 °C	244 °F	ISO 75-2/A

Electrical Properties	Metric	English	Comments
Volume Resistivity	5.50e+16 ohm-cm	5.50e+16 ohm-cm	IEC 60093

Electrical Properties	@Thickness 3.00 mm Metric	@Thickness 0.118 in English	Comments
Dielectric Strength	15.0 kV/mm @Thickness 3.00 mm	381 kV/in @Thickness 0.118 in	step by step; IEC 60243
High Voltage Arc Resistance to Ignition (HVAR)	60 - 120 sec @Thickness 3.00 mm	60 - 120 sec @Thickness 0.118 in	UL 746A
Comparative Tracking Index	>= 600 V @Thickness 3.00 mm	>= 600 V @Thickness 0.118 in	IEC 60112
Hot Wire Ignition, HWI	7.0 - 15 sec @Thickness 0.750 mm	7.0 - 15 sec @Thickness 0.0295 in	UL 746A
	15 - 30 sec @Thickness 3.00 mm	15 - 30 sec @Thickness 0.118 in	UL 746A
High Amp Arc Ignition, HAI	>= 120 arcs @Thickness 0.750 mm	>= 120 arcs @Thickness 0.0295 in	UL 746A
High Voltage Arc-Tracking Rate, HVTR	10.0 - 25.4 mm/min @Thickness 3.00 mm	0.394 - 1.00 in/min @Thickness 0.118 in	UL 746A

Processing Properties	Metric	English	Comments
Processing Temperature	285 - 305 °C	545 - 581 °F	Melt
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	
Mold Temperature	65.0 - 95.0 °C	149 - 203 °F	
	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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