Vydyne® R533 NT

Polyamide 66

Ascend Performance Materials Operations LLC

Message:

Vydyne R533 NT is general-purpose, 33% glass-fiber reinforced PA66 resin. Available in natural, it is an injection-molding grade that is lubricated for good machine feed, flow and mold release.
Glass-reinforced Vydyne resins provide higher heat distortion temperature, resistance to creep and better dimensional stability when compared with unreinforced PA66. These products have good chemical resistance to a broad range of chemicals including gasoline, hydraulic fluids and most solvents.
Vydyne R533 NT resin 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-fiber reinforced PA66 resins over aluminum and/or zinc die-cast parts.
Typical Applications/End Uses:
Vydyne R533 NT resin has been used for many under-the-hood automotive applications, motor housings for power tools and garden appliances. These resins have also been used in miscellaneous brackets, gears and clips that require high rigidity and strength.

General Information	
Filler / Reinforcement	Glass Fiber,33% Filler by Weight
Additive	Lubricant
Features	Good Chemical Resistance Good Corrosion Resistance Good Dimensional Stability Good Electrical Properties Good Flow Good Mold Release Heat Stabilized High Rigidity High Strength Lubricated Non-Corrosive
Uses	Appliance Components Automotive Applications Connectors Electrical/Electronic Applications Engineered Applications Lighting Applications Thin-walled Parts
Agency Ratings	ASTM D 4066 PA0111G35 ASTM D 6779 PA0111G35
UL File Number	E70062
Appearance	Natural Color

Forms		Pellets		
Processing Method		Injection Molding		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.40	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 23°C, 2.00 mm	0.90	--	%	
Flow : 23°C, 2.00 mm	0.40	--	%	
Water Absorption				ISO 62
23°C, 24 hr	0.80	--	%	
Equilibrium, 23°C, 50% RH	1.7	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	10600	7900	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	205	145	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	3.0	5.0	%	ISO 527-2
Flexural Modulus (23°C)	10200	6500	MPa	ISO 178
Flexural Stress (23°C)	290	200	MPa	ISO 178
Poisson's Ratio	0.40	--		ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-30°C	10	12	kJ/m²	
23°C	11	14	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179
-30°C	70	85	kJ/m²	
23°C	80	90	kJ/m²	
Notched Izod Impact Strength				ISO 180
-30°C	10	12	kJ/m²	
23°C	12	14	kJ/m²	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	260	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	250	--	°C	ISO 75-2/A
Melting Temperature	260	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C, 2.00 mm	2.1E-5	--	cm/cm/°C	
Transverse : 23 to 55°C, 2.00 mm	1.1E-4	--	cm/cm/°C	
RTI Elec				UL 746
0.750 mm	120	--	°C	

1.50 mm	120	--	°C	
3.00 mm	120	--	°C	
RTI Imp				UL 746
0.750 mm	100	--	°C	
1.50 mm	100	--	°C	
3.00 mm	105	--	°C	
RTI Str				UL 746
0.750 mm	125	--	°C	
1.50 mm	125	--	°C	
3.00 mm	125	--	°C	
Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Volume Resistivity (3.00 mm)	1.0E+14	--	ohms·cm	IEC 60093
Dielectric Strength (1.00 mm)	20	--	kV/mm	IEC 60243
Arc Resistance (3.00 mm)	PLC 5	--		ASTM D495
Comparative Tracking Index (3.00 mm)	600	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746
0.750 mm	PLC 0	--		
1.50 mm	PLC 0	--		
3.00 mm	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 1	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.750 mm	PLC 4	--		
1.50 mm	PLC 4	--		
3.00 mm	PLC 4	--		
Flammability	**Dry**	**Conditioned**	**Unit**	**Test Method**
Flame Rating				UL 94
0.750 mm	HB	--		
1.50 mm	HB	--		
3.00 mm	HB	--		
Injection	**Dry**	**Unit**		
Drying Temperature	80.0		°C	
Drying Time	4.0		hr	
Suggested Max Regrind	50		%	
Rear Temperature	280 to 310		°C	
Middle Temperature	280 to 310		°C	
Front Temperature	280 to 310		°C	
Nozzle Temperature	280 to 310		°C	
Processing (Melt) Temp	285 to 305		°C	
Mold Temperature	65.0 to 95.0		°C	

Recommended distributors for this material

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