

Vydyne® R533 NT

polyamide 66



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	
Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America
Filler / Reinforcement	• Glass Fiber, 33% Filler by Weight
Additive	• Lubricant
Features	• Good Mold Release • High Rigidity • High Flow • High Strength • Lubricated
Uses	• Automotive Under the Hood • Housings • Gears • Power/Other Tools
Agency Ratings	• ASTM D 4066 PA0111G35 • ASTM D 6779 PA0111G35
Automotive Specifications	• CHRYSLER MS-DB-41 CPN1853 Color: Natural
UL File Number	• E70062
Appearance	• Natural Color
Forms	• Pellets
Processing Method	• Injection Molding

Physical	Dry	Conditioned	Unit	Test Method
Density	1.40	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	0.90	--	%	
Flow : 73°F, 0.0787 in	0.40	--	%	
Water Absorption (73°F, 24 hr)	0.80	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	1.7	--	%	ISO 62

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	1.54E+6	1.15E+6	psi	ISO 527-2
Tensile Stress (Break, 73°F)	29700	21000	psi	ISO 527-2
Tensile Strain (Break, 73°F)	3.0	5.0	%	ISO 527-2
Flexural Modulus (73°F)	1.48E+6	943000	psi	ISO 178
Flexural Stress (73°F)	42100	29000	psi	ISO 178
Poisson's Ratio	0.40	--		ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-22°F	4.8	5.7	ft·lb/in ²	
73°F	5.2	6.7	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179
-22°F	33	40	ft·lb/in ²	
73°F	38	43	ft·lb/in ²	
Notched Izod Impact Strength				ISO 180
-22°F	4.8	5.7	ft·lb/in ²	
73°F	5.7	6.7	ft·lb/in ²	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	500	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	482	--	°F	
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	1.2E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	5.9E-5	--	in/in/°F	ISO 11359-2
RTI Elec				UL 746
0.0295 in	248	--	°F	
0.0591 in	248	--	°F	
0.118 in	248	--	°F	
RTI Imp				UL 746
0.0295 in	212	--	°F	
0.0591 in	212	--	°F	
0.118 in	221	--	°F	
RTI Str				UL 746
0.0295 in	257	--	°F	
0.0591 in	257	--	°F	
0.118 in	257	--	°F	

Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.118 in)	1.0E+14	--	ohm·cm	IEC 60093
Dielectric Strength (0.0394 in)	510	--	V/mil	IEC 60243
Arc Resistance (0.118 in)	PLC 5	--		ASTM D495
Comparative Tracking Index (0.118 in)	600	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746
0.0295 in	PLC 0	--		
0.0591 in	PLC 0	--		
0.118 in	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 1	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.0295 in	PLC 4	--		
0.0591 in	PLC 4	--		
0.118 in	PLC 4	--		
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.0295 in	HB	--		
0.0591 in	HB	--		
0.118 in	HB	--		
Injection			Dry Unit	
Drying Temperature			176 °F	
Drying Time			4.0 hr	
Suggested Max Regrind			50 %	
Rear Temperature			536 to 590 °F	
Middle Temperature			536 to 590 °F	
Front Temperature			536 to 590 °F	
Nozzle Temperature			536 to 590 °F	
Processing (Melt) Temp			545 to 581 °F	
Mold Temperature			149 to 203 °F	

Notes

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