

Vydyne® R633

polyamide 66/6 copolymer



Vydyne R633 is 33% glass-fiber reinforced, PA66/6 copolymer resin for superior surface appearance. Available in natural, this injection-molding grade resin is lubricated for machine feed and mold release.

Vydyne R633 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 PA66/6 resins over aluminum and/or zinc die-cast parts.

Typical Applications/End Uses:

Vydyne R633 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	• Copolymer • High Rigidity • Good Mold Release • High Strength • Lubricated • Good Surface Finish • High Tensile Strength
Uses	• Gears • Lawn and Garden Equipment • Power/Other Tools • Housings • Metal Replacement
Agency Ratings	• ASTM D 4066 PA111G35 • ASTM D 6779 PA081G35
Automotive Specifications	• FORD ESL-M4D533-A • GM GMP.PA66/6.002 • SAE J1639 PA1816
UL File Number	• E70062
Appearance	• Natural Color
Forms	• Pellets
Processing Method	• Injection Molding
Multi-Point Data	• Tensile Stress vs. Strain (ASTM D638)

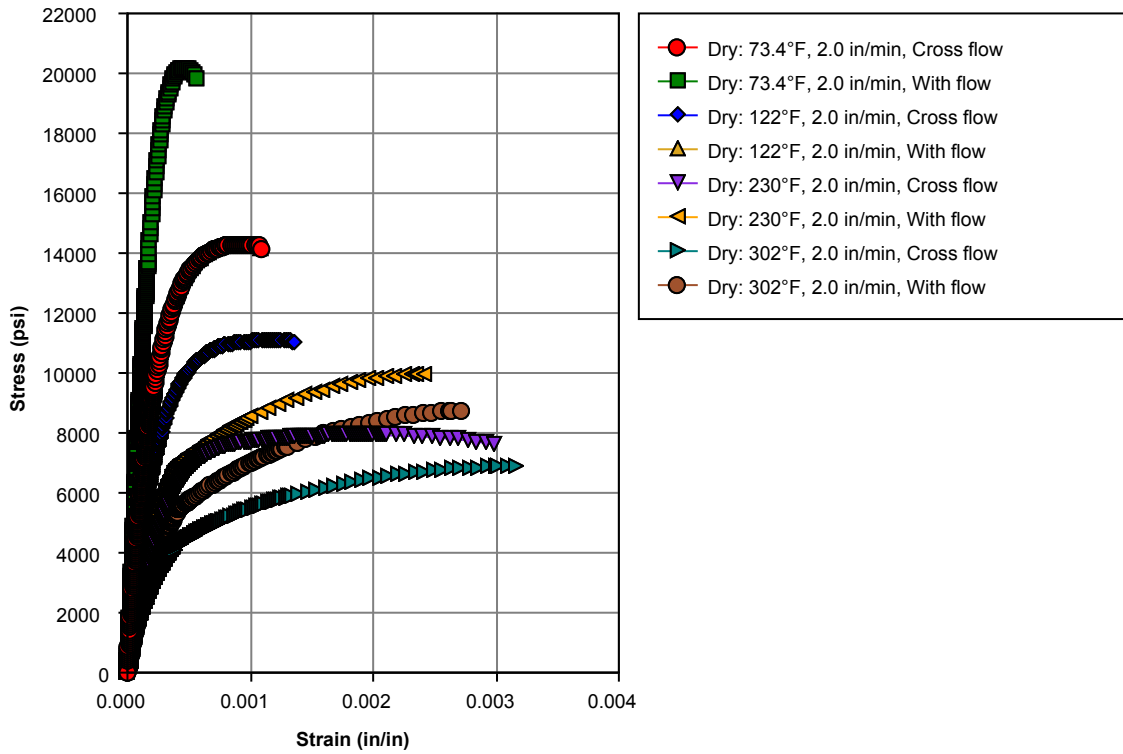
Physical	Dry	Conditioned	Unit	Test Method
Density	1.39	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	0.90	--	%	
Flow : 73°F, 0.0787 in	0.40	--	%	
Water Absorption (73°F, 24 hr)	1.3	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	2.3	--	%	ISO 62

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	1.57E+6	1.16E+6	psi	ISO 527-2
Tensile Stress (Break, 73°F)	26700	18900	psi	ISO 527-2
Tensile Strain (Break, 73°F)	4.0	6.0	%	ISO 527-2
Flexural Modulus (73°F)	1.28E+6	986000	psi	ISO 178
Flexural Stress (73°F)	37000	28300	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	5.1	7.1	ft·lb/in ²	
73°F	5.6	12	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179
-22°F	21	43	ft·lb/in ²	
73°F	24	44	ft·lb/in ²	
Notched Izod Impact Strength				ISO 180
-22°F	5.7	9.0	ft·lb/in ²	
73°F	6.2	10	ft·lb/in ²	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	446	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	428	--	°F	
Melting Temperature	451	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	8.3E-6	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	5.6E-5	--	in/in/°F	ISO 11359-2

Tensile Stress vs. Strain (ASTM D638)



Injection	Dry Unit
Drying Temperature	176 °F
Drying Time	4.0 hr
Suggested Max Regrind	25 %
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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North America

+1 888 927 2363

Europe

+32 10 608 600

Asia

+86 21 6340 3300

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