



Vydyne® R550

Ascend Performance Materials Operations LLC - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Vydyne R550 is general-purpose, hydrolysis-resistant, 50% glass-fiber reinforced PA66 resin. Available in natural, it is also lubricated for improved flow and offers superior surface appearance.

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.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 50% Filler by Weight		
Additive	• Lubricant		
Features	• Good Flow • Good Mold Release	• High Rigidity • High Strength	• Hydrolysis Resistant • Lubricated
Uses	• Gears		
Agency Ratings	• ASTM D4066 PA011G50 • ASTM D6779 PA011G50	• EC 1935/2004 • EU 10/2011	• EU 2023/2006 • FDA 21 CFR 177.1500
UL File Number	• E70062		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.58	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	0.50	--	%	
Flow : 73°F, 0.0787 in	0.040	--	%	
Water Absorption (24 hr, 73°F)	0.50	--	%	ISO 62
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	1.2	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	2.44E+6	1.83E+6	psi	ISO 527-2
Tensile Stress (Break, 73°F)	34800	26100	psi	ISO 527-2
Tensile Strain (Break, 73°F)	2.5	3.5	%	ISO 527-2
Flexural Modulus (73°F)	2.32E+6	1.63E+6	psi	ISO 178
Flexural Stress (73°F)	50800	39200	psi	ISO 178
Poisson's Ratio	0.40	--		ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	6.7	7.1	ft·lb/in ²	
73°F	7.1	10	ft·lb/in ²	

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Impact	Dry	Conditioned	Unit	Test Method
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	43	45	ft·lb/in ²	
73°F	45	52	ft·lb/in ²	
Notched Izod Impact Strength				ISO 180
-22°F	7.6	8.6	ft·lb/in ²	
73°F	8.1	10	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	491	--	°F	
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	6.7E-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
RTI Elec				UL 746
0.030 in	257	--	°F	
0.06 in	257	--	°F	
0.12 in	257	--	°F	
RTI Imp				UL 746
0.030 in	230	--	°F	
0.06 in	230	--	°F	
0.12 in	230	--	°F	
RTI Str				UL 746
0.030 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0295 in)	1.0E+13	--	ohms·cm	IEC 60093
Dielectric Strength (0.0394 in)	560	--	V/mil	IEC 60243
Arc Resistance (0.118 in)	PLC 5	--		ASTM D495
Comparative Tracking Index				IEC 60112
0.118 in	600	--	V	
High Amp Arc Ignition (HAI)				UL 746
0.030 in	PLC 0	--		
0.06 in	PLC 0	--		
0.12 in	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 1	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.030 in	PLC 4	--		
0.06 in	PLC 4	--		
0.12 in	PLC 4	--		
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.030 in	HB	--		
0.06 in	HB	--		
0.12 in	HB	--		
Additional Information	Dry	Conditioned	Unit	Test Method
Automotive Materials - (thickness d = 1mm)	+	--		FMVSS 302

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Processing Information

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

¹ Typical properties: these are not to be construed as specifications.