



Vydyne® R533T

Ascend Performance Materials Operations LLC - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Vydyne R533T is a translucent 33% glass-fiber reinforced PA66 resin designed specifically for use in power-steering reservoirs and other applications where chemical resistance, whiteness and transmittance are required.

Vydyne R533T 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-reinforced PA66 resins over aluminum and/or zinc die-cast parts.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 33% Filler by Weight		
Features	• Chemical Resistant	• High Tensile Strength	
Uses	• Automotive Under the Hood		
Agency Ratings	• ASTM D4066 PA113G35	• ASTM D6779 PA083G35	
Automotive Specifications	• CHRYSLER MS-DB-41 CPN2043	• GM GMP.PA66.013	
Appearance	• Translucent		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

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 (24 hr, 73°F)	0.80	--	%	ISO 62
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	1.8	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	1.48E+6	1.15E+6	psi	ISO 527-2
Tensile Stress (Break, 73°F)	30500	21800	psi	ISO 527-2
Tensile Strain (Break, 73°F)	4.0	6.0	%	ISO 527-2
Flexural Modulus (73°F)	1.38E+6	943000	psi	ISO 178
Flexural Stress (73°F)	42100	29700	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	3.8	5.7	ft·lb/in ²	
73°F	5.7	6.7	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179
-22°F	No Break	40 ft·lb/in ²		
73°F	No Break	43 ft·lb/in ²		

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Impact	Dry	Conditioned	Unit	Test Method
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	486	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	455	--	°F	
Melting Temperature	507	--	°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
0.030 in	248	--	°F	
0.06 in	248	--	°F	
0.12 in	248	--	°F	
RTI Imp				UL 746
0.030 in	212	--	°F	
0.06 in	212	--	°F	
0.12 in	221	--	°F	
RTI Str				UL 746
0.030 in	257	--	°F	
0.06 in	257	--	°F	
0.12 in	257	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.118 in)	1.0E+14	--	ohms·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				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 3	--		
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.030 in	HB	--		
0.06 in	HB	--		
0.12 in	HB	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.030 in	1380	--	°F	
0.06 in	1340	--	°F	
0.12 in	1470	--	°F	

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Flammability	Dry	Conditioned	Unit	Test Method
Glow Wire Ignition Temperature				IEC 60695-2-13
0.030 in	1430	--	°F	
0.06 in	1340	--	°F	
0.12 in	1380	--	°F	
Optical	Dry	Conditioned	Unit	Test Method
Transmittance	23.0	--	%	ASTM D1003

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.