Vydyne® R513 NT

Polyamide 66

Ascend Performance Materials Operations LLC

Message:

Vydyne R513 NT is general-purpose, 13% glass-fiber reinforced PA66 resin. Available in natural, it is an injection-molding grade resin that is lubricated for machine feed, flow and mold release. Vydyne R513 NT provides a higher heat distortion temperature, better resistance to creep, higher impact and better dimensional stability when compared with unreinforced PA66. This resin has good chemical resistance to a broad range of chemicals, including many aliphatic and aromatic hydrocarbons found in most solvents, gasoline, hydraulic fluids, greases and machine oils.
Vydyne R513 NT 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.
Typical Applications/End Uses:
Vydyne R513 NT resin has been used for many under-the-hood automotive applications, motor housings for power tools and garden appliances. This resin has also been used in miscellaneous brackets, gears and clips, which require high rigidity and strength.

General Information	
UL YellowCard	E70062-249081
Filler / Reinforcement	Glass Fiber,13% Filler by Weight
Additive	Lubricant
Features	Gasoline Resistance Good Chemical Resistance Good Flow Good Mold Release Grease Resistant Heat Stabilized High Rigidity High Strength Lubricated Oil Resistant Solvent Resistant
Uses	Automotive Under the Hood Gears Housings Power/Other Tools
Agency Ratings	ASTM D 4066 PA0111G15 ASTM D 6779 PA0111G15
UL File Number	E70062
Appearance	Natural Color
Forms	Pellets
Processing Method	Injection Molding

Physical	Dry	Conditioned	Unit	Test Method
Density	1.23	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 23°C, 2.00 mm	1.0	--	%	
Flow : 23°C, 2.00 mm	0.50	--	%	
Water Absorption				ISO 62
23°C, 24 hr	1.0	--	%	
Equilibrium, 23°C, 50% RH	2.2	--	%	
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (23°C)	6200	3900	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	115	75.0	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	3.0	13	%	ISO 527-2
Flexural Modulus (23°C)	5200	3150	MPa	ISO 178
Flexural Stress (23°C)	165	106	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	6.0	5.3	kJ/m²	
23°C	6.0	7.5	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179
-30°C	31	37	kJ/m²	
23°C	38	42	kJ/m²	
Notched Izod Impact Strength				ISO 180
-30°C	5.0	5.4	kJ/m²	
23°C	5.1	8.5	kJ/m²	
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Heat Deflection Temperature				
0.45 MPa, Unannealed	258	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	240	--	°C	ISO 75-2/A
Melting Temperature	260	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C, 2.00 mm	3.0E-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	85.0	--	°C	
1.50 mm	85.0	--	°C	
3.00 mm	105	--	°C	
RTI Str				UL 746
0.750 mm	115	--	°C	
1.50 mm	120	--	°C	
3.00 mm	120	--	°C	
Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Volume Resistivity (0.750 mm)	1.0E+14	--	ohms·cm	IEC 60093
Dielectric Strength (1.00 mm)	24	--	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	--		
Oxygen Index	25	--	%	ISO 4589-2
Injection	**Dry**	**Unit**		
Drying Temperature	80.0		°C	
Drying Time	4.0		hr	
Suggested Max Regrind	25		%	
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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