

Vydyne® R525H Nat polyamide 66



Vydyne R525H Nat is high-flow, 25% glass-fiber reinforced, heat-stabilized PA66 resin. Available in natural, it is specifically designed to maximize the retention of physical properties when exposed to anti-freeze solutions at elevated temperatures. This product is lubricated for improved machine feed and flow.

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 R525H Nat is heat-stabilized to minimize oxidative degradation of the polymer when exposed to elevated temperatures in service. This product provides improved retention of physical properties under exposure to long-term heat. Also, Vydyne R525H Nat has excellent knit-line strength and fatigue resistance, which is essential for cycle testing with anti-freeze solutions.

General				
Material Status	• Commercial: Active			
Availability	• Asia Pacific	• Europe	• North America	
Filler / Reinforcement	• Glass Fiber, 25% Filler by Weight			
Additive	• Heat Stabilizer	• Lubricant		
Features	• Antifreeze Resistant • Chemical Resistant • Fatigue Resistant	• Gasoline Resistant • Heat Stabilized • High Flow	• Lubricated • Solvent Resistant	
Uses	• Automotive Under the Hood			
Agency Ratings	• ASTM D4066 PA012G25 • ASTM D6779 PA012G25	• EC 1935/2004 • EU 10/2011	• EU 2023/2006 • FDA 21 CFR 177.1500	
Automotive Specifications	• DELPHI SD-2-227 • FORD WSK-M4D641-A • GM GMP.PA66.046	• GM GMP.PA66.083 • GM GMW16270P-PA66-GF25 • GM GMW3038P-PA66-GF25H	• GM GMW3038P-PA66-GF25J • GM QK 003012 H	
Appearance	• Natural Color			
Forms	• Pellets			
Processing Method	• Injection Molding			
Physical	Dry	Conditioned	Unit	Test Method
Density	1.32	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 23°C, 2.00 mm	0.90	--	%	
Flow : 23°C, 2.00 mm	0.40	--	%	
Water Absorption				ISO 62
24 hr, 23°C	0.90	--	%	
Equilibrium, 23°C, 50% RH	2.0	--	%	

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	8600	5500	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	174	117	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	3.0	7.0	%	ISO 527-2
Flexural Modulus (23°C)	7700	5700	MPa	ISO 178
Flexural Stress (23°C)	250	150	MPa	ISO 178
Poisson's Ratio	0.40	--		ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	10	10	kJ/m²	
23°C	11	12	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	55	66	kJ/m²	
23°C	65	67	kJ/m²	
Notched Izod Impact Strength				ISO 180
-30°C	9.0	10	kJ/m²	
23°C	10	15	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	245	--	°C	ISO 75-2/A
Melting Temperature	260	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C, 2.00 mm	2.5E-5	--	cm/cm/°C	
Transverse : 23 to 55°C, 2.00 mm	1.1E-4	--	cm/cm/°C	
RTI Elec				UL 746
0.75 mm	140	--	°C	
1.5 mm	140	--	°C	
3.0 mm	140	--	°C	
RTI Imp				UL 746
0.75 mm	120	--	°C	
1.5 mm	120	--	°C	
3.0 mm	120	--	°C	
RTI Str				UL 746
0.75 mm	125	--	°C	
1.5 mm	140	--	°C	
3.0 mm	140	--	°C	

Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.750 mm)	1.0E+13	--	ohms-cm	IEC 60093
Dielectric Strength (1.00 mm)	20	--	kV/mm	IEC 60243
Arc Resistance (3.00 mm)	PLC 6	--		ASTM D495
Comparative Tracking Index (3.00 mm)	250 to 399	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746
0.75 mm	PLC 0	--		
1.5 mm	PLC 0	--		
3.0 mm	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 1	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.75 mm	PLC 4	--		
1.5 mm	PLC 3	--		
3.0 mm	PLC 4	--		
Flammability	Dry	Conditioned	Unit	Test Method
Burning Rate (2.00 mm, Self-Extinguishing)	0.0	--	mm/min	ISO 3795
Flame Rating				UL 94
0.75 mm	HB	--		
1.5 mm	HB	--		
3.0 mm	HB	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.75 mm	675	--	°C	
1.5 mm	675	--	°C	
3.0 mm	675	--	°C	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.75 mm	700	--	°C	
1.5 mm	700	--	°C	
3.0 mm	700	--	°C	
Injection	Dry Unit			
Drying Temperature	80 °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 to 95 °C			

Notes

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

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