

# Vydyne® R535H NT

## polyamide 66



Vydyne R535H NT is general-purpose, heat-stabilized, 35% glass-fiber reinforced PA66 resin. It is specifically designed to maximize the retention of physical properties when exposed to anti-freeze solutions at elevated temperatures. This product 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.

Vydyne R535H NT 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 R535H NT has excellent knit-line strength and fatigue resistance, which is essential for cycle testing with anti-freeze solutions.

### Typical Applications/End Uses:

Vydyne R535H NT has been used successfully in a wide range of injection-molding engineering applications, including automotive clips, radiator end-tanks, parts of the air-conditioning and fuel distribution systems; electrical connectors, housings and bobbins; and industrial applications such as gears, bearing shells, covers and housings.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 35% 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 PA012G35 • ASTM D6779 PA012G35	• EC 1935/2004 • EU 10/2011	• EU 2023/2006 • FDA 21 CFR 177.1500
Automotive Specifications	• FORD WSK-M4D673-A • GM GMW16270P-PA66-GF35	• GM GMW3038P-PA66-GF35H • GM GMW3038P-PA66-GF35J	
UL File Number	• E70062		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

Physical	Dry	Conditioned	Unit	Test Method
Density	1.41	--	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 2.00 mm	0.90	--	%	
Flow : 2.00 mm	0.40	--	%	
Water Absorption				ISO 62
24 hr, 23°C	0.80	--	%	
Equilibrium, 23°C, 50% RH	1.6	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	11600	8500	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	210	150	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	3.0	5.0	%	ISO 527-2
Flexural Modulus (23°C)	10500	7000	MPa	ISO 178
Flexural Stress (23°C)	300	205	MPa	ISO 178
Poisson's Ratio	0.40	--		ISO 527
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	11	12	kJ/m <sup>2</sup>	
23°C	12	14	kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	70	85	kJ/m <sup>2</sup>	
23°C	80	90	kJ/m <sup>2</sup>	
Notched Izod Impact Strength				ISO 180
-30°C	11	12	kJ/m <sup>2</sup>	
23°C	12	14	kJ/m <sup>2</sup>	

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	260	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	250	--	°C	ISO 75-2/A
Melting Temperature	260	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C	2.0E-5	--	cm/cm/°C	
Transverse : 23 to 55°C	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	125	--	°C	
1.5 mm	125	--	°C	
3.0 mm	125	--	°C	
RTI Str				UL 746
0.75 mm	140	--	°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	700	--	°C	
1.5 mm	700	--	°C	
3.0 mm	875	--	°C	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.75 mm	725	--	°C	
1.5 mm	725	--	°C	
3.0 mm	750	--	°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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