

Vydyne® R525H

Polyamide 66

Ascend Performance Materials Operations LLC

Message:

Vydyne R525H is hydrolysis-resistant, 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 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 has excellent knit-line strength and fatigue resistance, which is essential for cycle testing with anti-freeze solutions.

Typical Applications/End Uses

Vydyne R525H resin is used for under-the-hood automotive applications. Its hydrolysis-resistant properties make R525H an excellent candidate for radiator end tank and heater core applications.

General Information				
UL YellowCard		E70062-249083		
Filler / Reinforcement		Glass Fiber,25% Filler by Weight		
Additive		Heat Stabilizer		
		Lubricant		
Features		Antifreeze Resistant		
		Fatigue Resistant		
		Gasoline Resistance		
		Good Chemical Resistance		
		Good Flow		
		Heat Stabilized		
		Hydrolysis Resistant		
		Lubricated		
		Solvent Resistant		
Uses		Automotive Under the Hood		
Agency Ratings		ASTM D 4066 PA0121G25		
		ASTM D 6779 PA0121G25		
Appearance		Natural Color		
Forms		Pellets		
Processing Method		Injection Molding		
Multi-Point Data		Isothermal Stress vs. Strain (ISO 11403-1)		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.32	--	g/cm ³	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
23°C, 24 hr	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/m ²	
23°C	11	12	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	55	66	kJ/m ²	
23°C	65	67	kJ/m ²	
Notched Izod Impact Strength				ISO 180
-30°C	9.0	10	kJ/m ²	
23°C	10	15	kJ/m ²	
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
0.750 mm	140	--	°C	
1.50 mm	140	--	°C	
3.00 mm	140	--	°C	
RTI Imp				UL 746
0.750 mm	120	--	°C	
1.50 mm	120	--	°C	

3.00 mm	120	--	°C	
RTI Str				UL 746
0.750 mm	125	--	°C	
1.50 mm	140	--	°C	
3.00 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
0.750 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 3	--		
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	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.750 mm	675	--	°C	
1.50 mm	675	--	°C	
3.00 mm	675	--	°C	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.750 mm	700	--	°C	
1.50 mm	700	--	°C	
3.00 mm	700	--	°C	
Additional Information	Dry	Conditioned		Test Method
Automotive Materials - (thickness d = 1mm)	+	--		FMVSS 302
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

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