

Vydyne® R515H Natural

Polyamide 66

Ascend Performance Materials Operations LLC

Message:

Vydyne R515H Natural is high-flow, heat-stabilized, hydrolysis-resistant, 15% glass-fiber reinforced 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 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 R515H Natural 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 R515H Natural has excellent knit-line strength and fatigue resistance, which is essential for cycle testing with anti-freeze solutions.

Typical Applications/End Uses:

Vydyne R515H Natural is successfully used in a wide range of injection molding engineering applications, including automotive clips, radiator end tanks, parts of the air-conditioning and petrol distribution system, etc. (under the hood); electrical connectors, housings, bobbins, etc.; and in industrial applications such as gears, bearing shells, covers, housings, etc.

General Information	
UL YellowCard	E70062-249083
Filler / Reinforcement	Glass Fiber, 15% Filler by Weight
Additive	Heat Stabilizer
	Lubricant
Features	Gasoline Resistance
	Good Chemical Resistance
	Good Mold Release
	Grease Resistant
	Heat Stabilized
	High Flow
	High Rigidity
	High Strength
	Lubricated
	Oil Resistant
	Solvent Resistant
Uses	Automotive Under the Hood
	Gears
	Housings
	Power/Other Tools
Agency Ratings	ASTM D 4066 PA0121G15
	ASTM D 6779 PA0121G15
UL File Number	E70062

Appearance		Natural Color		
Forms		Pellets		
Processing Method		Injection Molding		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.24	--	g/cm ³	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)	6600	4000	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	120	80.0	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	3.0	13	%	ISO 527-2
Flexural Modulus (23°C)	5900	3250	MPa	ISO 178
Flexural Stress (23°C)	170	110	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/m ²	
23°C	6.0	7.5	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179
-30°C	32	38	kJ/m ²	
23°C	39	43	kJ/m ²	
Notched Izod Impact Strength				ISO 180
-30°C	5.7	5.4	kJ/m ²	
23°C	6.6	7.0	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	241	--	°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	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
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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