



Vydyne® R525H Nat

Ascend Performance Materials Operations LLC - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

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		

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.32	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	0.90	--	%	
Flow : 73°F, 0.0787 in	0.40	--	%	
Water Absorption (24 hr, 73°F)	0.90	--	%	ISO 62
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	2.0	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	1.25E+6	798000	psi	ISO 527-2
Tensile Stress (Break, 73°F)	25200	17000	psi	ISO 527-2
Tensile Strain (Break, 73°F)	3.0	7.0	%	ISO 527-2
Flexural Modulus (73°F)	1.12E+6	827000	psi	ISO 178
Flexural Stress (73°F)	36300	21800	psi	ISO 178

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Mechanical	Dry	Conditioned	Unit	Test Method
Poisson's Ratio	0.40	--		ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	4.8	4.8	ft·lb/in ²	
73°F	5.2	5.7	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	26	31	ft·lb/in ²	
73°F	31	32	ft·lb/in ²	
Notched Izod Impact Strength				ISO 180
-22°F	4.3	4.8	ft·lb/in ²	
73°F	4.8	7.1	ft·lb/in ²	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	496	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	473	--	°F	
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	1.4E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	6.1E-5	--	in/in/°F	ISO 11359-2
RTI Elec				UL 746
0.030 in	284	--	°F	
0.06 in	284	--	°F	
0.12 in	284	--	°F	
RTI Imp				UL 746
0.030 in	248	--	°F	
0.06 in	248	--	°F	
0.12 in	248	--	°F	
RTI Str				UL 746
0.030 in	257	--	°F	
0.06 in	284	--	°F	
0.12 in	284	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0295 in)	1.0E+13	--	ohms·cm	IEC 60093
Dielectric Strength (0.0394 in)	510	--	V/mil	IEC 60243
Arc Resistance (0.118 in)	PLC 6	--		ASTM D495
Comparative Tracking Index				IEC 60112
0.118 in	250 to 399	--	V	
High Amp Arc Ignition (HAI)				UL 746
0.030 in	PLC 0	--		
0.06 in	PLC 0	--		
0.12 in	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 1	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.030 in	PLC 4	--		
0.06 in	PLC 3	--		
0.12 in	PLC 4	--		
Flammability	Dry	Conditioned	Unit	Test Method
Burning Rate				ISO 3795
0.0787 in, Self-Extinguishing	0.0	--	in/min	

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Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.030 in	HB	--		
0.06 in	HB	--		
0.12 in	HB	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.030 in	1250	--	°F	
0.06 in	1250	--	°F	
0.12 in	1250	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.030 in	1290	--	°F	
0.06 in	1290	--	°F	
0.12 in	1290	--	°F	

Processing Information

Injection	Dry	Unit
Drying Temperature	176	°F
Drying Time	4.0	hr
Suggested Max Regrind	25	%
Rear Temperature	536 to 590	°F
Middle Temperature	536 to 590	°F
Front Temperature	536 to 590	°F
Nozzle Temperature	536 to 590	°F
Processing (Melt) Temp	545 to 581	°F
Mold Temperature	149 to 203	°F

Notes

¹ Typical properties: these are not to be construed as specifications.