Vydyne® R530H Black

Ascend Performance Materials Operations LLC - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Vydyne R530H Black is general-purpose, heat-stabilized, hydrolysis-resistant, 30% 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 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 R530H Black 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 R530H has excellent knit-line strength and fatigue resistance, which is essential for cycle testing with anti-freeze solutions.

Typical Applications/End Uses:
Vydyne R530H Black has been used for several under-the-hood automotive applications. The hydrolysis-resistant properties make it an excellent candidate for radiator end tank and heater core applications.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight		
Additive	• Heat Stabilizer	• Lubricant	
Features	• Antifreeze Resistant • Chemical Resistant • Fatigue Resistant	• Gasoline Resistant • Good Flow • Heat Stabilized	• Hydrolysis Resistant • Lubricated • Solvent Resistant
Uses	• Automotive Under the Hood • Connectors	• Fasteners • Transmission Applications	
Agency Ratings	• ASTM D4066 PA012G30	• ASTM D6779 PA012G30	
Automotive Specifications	• CHRYSLER MS-DB-41 CPN4018 • FORD WSK-M4D642-A • FORD WSK-M4D642-A2	• FORD WSK-M4D752-A • GM GMP.PA66.040 • GM GMW16270P-PA66-GF30	• GM GMW3038P-PA66-GF30H • GM GMW3038P-PA66-GF30J • GM QK 003013 HW
UL File Number	• E70062		
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density	1.37	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 0.0787 in	0.90	--	%	
Flow : 0.0787 in	0.40	--	%	
Water Absorption (24 hr, 73°F)	0.90	--	%	ISO 62
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	1.9	--	%	

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	1.45E+6	1.07E+6	psi	ISO 527-2
Tensile Stress (Break)	28300	19600	psi	ISO 527-2
Tensile Strain (Break)	3.0	5.0	%	ISO 527-2
Flexural Modulus	1.39E+6	870000	psi	ISO 178
Flexural Stress	39200	27600	psi	ISO 178
Poisson's Ratio	0.40	--		ISO 527
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	4.8	5.2	ft·lb/in²	
73°F	5.2	6.2	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	31	38	ft·lb/in²	
73°F	36	40	ft·lb/in²	
Notched Izod Impact Strength				ISO 180
-22°F	4.8	5.2	ft·lb/in²	
73°F	5.7	6.2	ft·lb/in²	
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	500	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	482	--	°F	
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F)	1.2E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F)	5.9E-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

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Electrical	Dry	Conditioned	Unit	Test Method
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	
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.