

Vydyne® R533HM

polyamide 66



Vydyne R533HM is 33% glass-fiber reinforced, hydrolysis-resistant, recycled, heat-stabilized PA66 resin. Available in black, 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 R533HM resin 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 R533HM resin has excellent knit-line strength and fatigue resistance, which is essential for cycle testing with anti-freeze solutions.

Typical Applications/End Uses:

Vydyne R533HM resin has been used for many under-the-hood automotive applications, motor housings for power tools and garden appliances. This resin has also been used in miscellaneous brackets, gears and clips that require high rigidity and strength.

General	
Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America
Filler / Reinforcement	• Glass Fiber, 33% Filler by Weight
Additive	• Heat Stabilizer • Lubricant
Recycled Content	• Yes
Features	• Good Flow • Good Mold Release • Heat Stabilized • High Rigidity • High Strength • Hydrolysis Resistant • Lubricated
Uses	• Automotive Under the Hood • Housings • Gears • Power/Other Tools
Agency Ratings	• ASTM D 4066 PA0121G35 • ASTM D 6779 PA0121G35
Automotive Specifications	<ul style="list-style-type: none"> • CHRYSLER MS-DB41 CPN1900 • CHRYSLER MS-DB41 CPN2043 • CHRYSLER MS-DB41 CPN2727 • CHRYSLER MS-DB41 CPN4014 • DAEWOO EDS-M-5165-02 • FORD ESE-M4D287-A • FORD ESE-M4D287-B • FORD WSK-M4D663-A • GM GMP.PA66.013 • GM GMP.PA66.054 • SAE J1639 PA1116 • TagAZ TAMS-8729-01
UL File Number	• E70062
Appearance	• Black
Forms	• Pellets
Processing Method	• Injection Molding

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Physical	Dry	Conditioned	Unit	Test Method
Density	1.40	--	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 (73°F, 24 hr)	0.80	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	1.7	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	1.54E+6	1.15E+6	psi	ISO 527-2
Tensile Stress (Break, 73°F)	29700	21000	psi	ISO 527-2
Tensile Strain (Break, 73°F)	3.0	5.0	%	ISO 527-2
Flexural Modulus (73°F)	1.48E+6	943000	psi	ISO 178
Flexural Stress (73°F)	42000	29000	psi	ISO 178
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	5.7	ft·lb/in ²	
73°F	5.2	6.7	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	33	40	ft·lb/in ²	
73°F	38	43	ft·lb/in ²	
Notched Izod Impact Strength				ISO 180
-22°F	4.8	5.7	ft·lb/in ²	
73°F	5.7	6.7	ft·lb/in ²	

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature 66 psi, Unannealed	500	--	°F	ISO 75-2/B
Heat Deflection Temperature 264 psi, Unannealed	482	--	°F	ISO 75-2/A
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	1.2E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	5.9E-5	--	in/in/°F	ISO 11359-2
RTI Elec				UL 746
0.0295 in	284	--	°F	
0.0591 in	284	--	°F	
0.118 in	284	--	°F	
RTI Imp				UL 746
0.0295 in	257	--	°F	
0.0591 in	257	--	°F	
0.118 in	257	--	°F	
RTI Str				UL 746
0.0295 in	284	--	°F	
0.0591 in	284	--	°F	
0.118 in	284	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0295 in)	1.0E+13	--	ohm-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 (0.118 in)	250 to 399	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746
0.0295 in	PLC 0	--		
0.0591 in	PLC 0	--		
0.118 in	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 1	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.0295 in	PLC 4	--		
0.0591 in	PLC 3	--		
0.118 in	PLC 4	--		

Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.0295 in	HB	--		
0.0591 in	HB	--		
0.118 in	HB	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.0295 in	1250	--	°F	
0.0591 in	1250	--	°F	
0.118 in	1250	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.0295 in	1290	--	°F	
0.0591 in	1290	--	°F	
0.118 in	1290	--	°F	
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

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