

Vydyne® R543H BK02

polyamide 66



Vydyne R543H BK02 is general-purpose, 43% glass-fiber reinforced PA66 resin. Available in black, it is an injection-molding grade resin that is lubricated for machine feed, flow and mold release.

Glass-reinforced Vydyne resins provide a higher heat distortion temperature, better resistance to creep, higher impact and better dimensional stability when compared with unreinforced PA66. These products have good chemical resistance to a broad range of chemicals, including many aliphatic and aromatic hydrocarbons found in most solvents, gasoline, hydraulic fluids, greases and machine oils.

Vydyne R543H BK02 resin has tensile strength and modulus properties just below aluminum and zinc and can replace these

metals in numerous applications due to an excellent balance of properties. Reduction in production costs, energy consumption and part weight are key advantages of Vydyne glass-reinforced PA66 resins over aluminum and/ or zinc die-cast parts.

Vydyne R543H BK02 is formulated to minimize the oxidative and thermal degradation of the PA66 polymer when exposed to elevated temperatures for extended periods of time. Vydyne R543H BK02 provides improved retention of physical properties under exposure to long-term heat. The continuous operating use temperature is 275°F, with short-term peak temperatures as high as 475°F.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 43% Filler by Weight		
Additive	• Heat Stabilizer	• Lubricant	
Features	<ul style="list-style-type: none"> • Chemical Resistant • Creep Resistant • Gasoline Resistant • Good Dimensional Stability • Good Impact Resistance 	<ul style="list-style-type: none"> • Good Mold Release • Grease Resistant • Heat Stabilized • High Flow • High Rigidity 	<ul style="list-style-type: none"> • High Strength • High Tensile Strength • Lubricated • Oil Resistant • Solvent Resistant
Uses	<ul style="list-style-type: none"> • Automotive Under the Hood • Gears 	<ul style="list-style-type: none"> • Housings • Lawn and Garden Equipment 	• Power/Other Tools
Agency Ratings	• ASTM D4066 PA012G45	• ASTM D6779 PA012G45	
Automotive Specifications	<ul style="list-style-type: none"> • CHRYSLER MS-DB-41 CPN2508 • FORD ESF-M4D335-A 	<ul style="list-style-type: none"> • GM GMP.PA66.025 • TOYOTA TSM 5603G-2C 	
UL File Number	• E70062		
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		

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Physical	Dry	Conditioned	Unit	Test Method
Density	1.50	--	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
24 hr, 23°C	0.60	--	%	
Equilibrium, 23°C, 50% RH	1.5	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	14800	11300	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	225	170	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	3.0	4.0	%	ISO 527-2
Flexural Modulus (23°C)	12500	9400	MPa	ISO 178
Flexural Stress (23°C)	340	250	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	13	14	kJ/m ²	
23°C	14	20	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179
-30°C	87	90	kJ/m ²	
23°C	92	95	kJ/m ²	
Notched Izod Impact Strength				ISO 180
-30°C	13	13	kJ/m ²	
23°C	13	19	kJ/m ²	

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	260	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	252	--	°C	ISO 75-2/A
Melting Temperature	260	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C, 2.00 mm	1.6E-5	--	cm/cm/°C	
Transverse : 23 to 55°C, 2.00 mm	1.0E-4	--	cm/cm/°C	
RTI Elec				UL 746
0.75 mm	140	--	°C	
1.5 mm	140	--	°C	
3.0 mm	140	--	°C	
RTI Imp				UL 746
0.75 mm	130	--	°C	
1.5 mm	130	--	°C	
3.0 mm	130	--	°C	
RTI Str				UL 746
0.75 mm	140	--	°C	
1.5 mm	140	--	°C	
3.0 mm	140	--	°C	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.750 mm)	1.0E+12	--	ohms-cm	IEC 60093
Dielectric Strength (1.00 mm)	20	--	kV/mm	IEC 60243
Arc Resistance (3.00 mm)	PLC 5	--		ASTM D495
Comparative Tracking Index (3.00 mm)	400 to 599	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746
0.75 mm	PLC 0	--		
1.5 mm	PLC 0	--		
3.0 mm	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 1	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.75 mm	PLC 4	--		
1.5 mm	PLC 3	--		
3.0 mm	PLC 4	--		

Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.75 mm	HB	--		
1.5 mm	HB	--		
3.0 mm	HB	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.75 mm	675	--	°C	
1.5 mm	675	--	°C	
3.0 mm	960	--	°C	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.75 mm	700	--	°C	
1.5 mm	700	--	°C	
3.0 mm	750	--	°C	
Oxygen Index	25	--	%	ISO 4589-2
Additional Information	Dry	Conditioned	Unit	Test Method
Automotive Materials - (thickness d = 1mm)	+	--		FMVSS 302
Injection		Dry	Unit	
Drying Temperature		80	°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 to 95	°C	

Notes

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

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