

Vydyne® R540H BK02

Ascend Performance Materials Operations LLC - Polyamide 66

General Information

Product Description

Vydyne R540H BK02 is a general purpose, 40% glass-filled, heat-stabilized PA66 based resin designed for injection molding applications. R540H BK02 offers improved flow with a black surface finish and maintains the excellent resistance typical of PA66 in chemicals, machine and motor oils, solvents, and gasoline.

General

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America
Filler / Reinforcement	• Glass Fiber, 40% Filler by Weight
Additive	• Heat Stabilizer • Lubricant
Features	• Antifreeze Resistant • Gasoline Resistant • Lubricated • Chemical Resistant • Heat Stabilized • Solvent Resistant • Creep Resistant • High Flow • Fatigue Resistant • Hydrolysis Resistant
Agency Ratings	• ASTM D4066 PA012G40 • ASTM D6779 PA012G40
RoHS Compliance	• RoHS Compliant
Automotive Specifications	• GM GMW3038P-PA66-GF40H • GM GMW3038P-PA66-GF40J • MAHLE BEHR SD2-214 Color: Para. 4.5
UL File Number	• E70062
Appearance	• Black
Forms	• Pellets
Processing Method	• Injection Molding
Resin ID	• PA66-GF40

Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.46	--	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)	0.60	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	1.5	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	2.05E+6	1.61E+6	psi	ISO 527-1
Tensile Stress (Break, 73°F)	31900	23900	psi	ISO 527-2
Tensile Strain (Break, 73°F)	3.0	4.0	%	ISO 527-2
Flexural Modulus (73°F)	1.78E+6	1.35E+6	psi	ISO 178
Flexural Stress (73°F)	48600	36300	psi	ISO 178
Poisson's Ratio (73°F)	0.40	--		ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	5.7	5.2	ft·lb/in ²	
73°F	5.7	9.0	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	38	41	ft·lb/in ²	
73°F	43	44	ft·lb/in ²	
Notched Izod Impact Strength				ISO 180/1A
-22°F	6.2	6.2	ft·lb/in ²	
73°F	6.7	9.0	ft·lb/in ²	



Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	500	--	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	486	--	°F	ISO 75-2/A
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	9.4E-6	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	5.7E-5	--	in/in/°F	ISO 11359-2
RTI Elec				UL 746B
0.030 in	284	--	°F	
0.06 in	284	--	°F	
0.12 in	284	--	°F	
RTI Imp				UL 746B
0.030 in	257	--	°F	
0.06 in	257	--	°F	
0.12 in	257	--	°F	
RTI Str				UL 746B
0.030 in	284	--	°F	
0.06 in	284	--	°F	
0.12 in	284	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0394 in)	1.0E+13	--	ohms·cm	IEC 60093
Electric Strength (0.0394 in)	510	--	V/mil	IEC 60243-1
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 746A
0.030 in	PLC 0	--		
0.06 in	PLC 0	--		
0.12 in	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR) (0.118 in)	PLC 1	--		UL 746A
Hot-wire Ignition (HWI)				UL 746A
0.030 in	PLC 4	--		
0.06 in	PLC 3	--		
0.12 in	PLC 4	--		
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	1290	--	°F	
0.06 in	1290	--	°F	
0.12 in	1610	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.030 in	1340	--	°F	
0.06 in	1340	--	°F	
0.12 in	1380	--	°F	

Processing Information

Injection	Dry	Unit
Drying Temperature	176	°F
Drying Time	4.0	hr
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

