

# Vydyne® 49H BK03

## polyamide 66



Vydyne 49H BK03 is general-purpose, impact-modified PA66 resin. Available in black, it is heat-stabilized for improved resistance to elevated temperatures. The heat stabilization package for Vydyne 49H BK03 was formulated to provide thermal endurance when used in applications in which continuous or extended high-temperature exposure is anticipated.

Vydyne 49H BK03 is recognized for all the processing and property advantages inherent to PA66 with the addition of improved impact strength. This resin offers a well balanced combination of engineering properties characterized by high melt point, good surface lubricity, abrasion resistance and resistance to many chemicals, machine and motor oils, solvents and gasoline.

General				
Material Status	• Commercial: Active			
Availability	• Asia Pacific	• Europe	• North America	
Additive	• Heat Stabilizer	• Impact Modifier		
Features	• Abrasion Resistant • Chemical Resistant • Gasoline Resistant • General Purpose	• Good Processability • Good Toughness • Heat Stabilized • High Impact Resistance	• Impact Modified • Low Temperature Toughness • Oil Resistant • Solvent Resistant	
Uses	• Automotive Applications • Connectors • Consumer Applications	• Electrical/Electronic Applications • Fasteners • Gears	• Industrial Applications	
Agency Ratings	• ASTM D4066 PA0161	• ASTM D6779 PA0161		
Automotive Specifications	• DELPHI M-3592V	• GM GMW16447P-PA66-T1	• GM QK 002921 E	
Appearance	• Black			
Forms	• Pellets			
Processing Method	• Injection Molding			
Physical	Dry	Conditioned	Unit	Test Method
Density	1.11	--	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 2.00 mm	1.6	--	%	
Flow : 2.00 mm	1.8	--	%	
Water Absorption				ISO 62
24 hr, 23°C	1.3	--	%	
Equilibrium, 23°C, 50% RH	2.3	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	3040	2130	MPa	ISO 527-2
Tensile Stress				ISO 527-2
Yield	70.0	50.0	MPa	
Break	46.0	42.0	MPa	
Tensile Strain (Break)	17	40	%	ISO 527-2
Flexural Modulus	2600	890	MPa	ISO 178
Flexural Stress	81.0	27.0	MPa	ISO 178

Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-40°C	8.0	6.0	kJ/m <sup>2</sup>	
-30°C	11	10	kJ/m <sup>2</sup>	
23°C	13	43	kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength				ISO 179
-30°C	No Break	No Break		
23°C	No Break	No Break		
Notched Izod Impact Strength				ISO 180
-40°C	8.0	10	kJ/m <sup>2</sup>	
-30°C	9.0	15	kJ/m <sup>2</sup>	
23°C	10	37	kJ/m <sup>2</sup>	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	202	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	69.0	--	°C	ISO 75-2/A
Melting Temperature	260	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C, 2.00 mm	8.6E-5	--	cm/cm/°C	
Transverse : 23 to 55°C, 2.00 mm	1.2E-4	--	cm/cm/°C	
RTI Elec				UL 746
0.75 mm	130	--	°C	
1.5 mm	130	--	°C	
3.0 mm	130	--	°C	
RTI Imp				UL 746
0.75 mm	75.0	--	°C	
1.5 mm	75.0	--	°C	
3.0 mm	75.0	--	°C	
RTI Str				UL 746
0.75 mm	110	--	°C	
1.5 mm	110	--	°C	
3.0 mm	110	--	°C	

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Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.750 mm)	1.0E+11	--	ohms-cm	IEC 60093
Dielectric Strength (1.00 mm)	14	--	kV/mm	ASTM D149
Arc Resistance (3.00 mm)	PLC 6	--		ASTM D495
Comparative Tracking Index (3.00 mm)	525	--	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 2	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.75 mm	PLC 4	--		
1.5 mm	PLC 4	--		
3.0 mm	PLC 3	--		
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	725	--	°C	
1.5 mm	750	--	°C	
3.0 mm	700	--	°C	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.75 mm	750	--	°C	
1.5 mm	775	--	°C	
3.0 mm	725	--	°C	
Additional Information	Dry	Conditioned	Unit	Test Method
Automotive Materials - (thickness d = 1 mm)	+	--		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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