Vydyne® 49H BK03

polyamide 66

Vydyne 49H BK03 is a general-purpose, impact-modified, high modulus PA66 resin. 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

Additive	• Heat Stabilizer		
Features	• Abrasion Resistance	• Chemical Resistant	• Gasoline Resistant
	• General Purpose	• Good Processability	• Good Toughness
	• Heat Stabilized	• High Impact Resistance	• Oil Resistant
	• Solvent Resistant		
Agency Rating	• ASTM, D4066 PA0161	• ASTM, D6779 PA0161	
Automotive Specifications	• Aptiv M3592V	• Daimler DBL1224 (partial compliance)	• Ford WSS-M4D706-B1
	• GM GMW16447P-PA66-T1	• VW TL 50180 (compliance)	
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		

Physical	dry	cond.	Unit	Test Standard
Density	1.11	-	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 23°C, 2.00 mm	1.6	*	%	
Flow : 23°C, 2.00 mm	1.8	*	%	
Water Absorption				ISO 62
23°C, 24 hr	1.3	*	%	
Equilibrium, 23°C, 50% RH	2.3	*	%	

Mechanical	dry	cond.	Unit	Test Standard
Tensile Modulus (23°C)	3000	2100	MPa	ISO 527-2
Tensile Stress (Yield, 23°C)	70	50	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	46	42	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	17	40	%	ISO 527-2
Flexural Modulus (23°C)	2600	900	MPa	ISO 178
Flexural Strength (23°C)	81	27	MPa	ISO 178

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Impact	dry	cond.	Unit	Test Standard
Charpy Notched Impact Strength				ISO 179/1eA
+23°C	13	43	kJ/m²	
-30°C	11	10	kJ/m²	
-40°C	8	6	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
+23°C	N	N	kJ/m²	
-30°C	N	N	kJ/m²	
Notched Izod Impact Strength				ISO 180/1A
+23°C	10	37	kJ/m²	
-30°C	9	15	kJ/m²	
-40°C	8	10	kJ/m²	

Thermal	dry	cond.	Unit	Test Standard
Heat Deflection Temperature				ISO 75-2/A
1.80 MPa, Unannealed	69	-	°C	
0.45 MPa, Unannealed	202	-	°C	
Melting Temperature	260	*	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C, 2.00 mm	86	*	E-6/K	
Transverse : 23 to 55°C, 2.00 mm	122	*	E-6/K	
RTI Elec				UL 746
0.750 mm	130		°C	
1.50 mm	130		°C	
3.00 mm	130		°C	
RTI Imp				UL 746
0.750 mm	75		°C	
1.50mm	75		°C	
3.00 mm	75		°C	
RTI Str				UL 746
0.750 mm	110		°C	
1.50 mm	110		°C	
3.00 mm	110		°C	

Electrical	dry	cond.	Unit	Test Standard
Volume Resistivity (1.00 mm)	1E9	-	Ohm*m	IEC 60093
Dielectric Strength (1.00 mm)	14	-	kV/mm	IEC 60243
Arc Resistance (3.00 mm)	6			ASTM D 495
Comparative Tracking Index (3.00 mm)	525		V	IEC 60112

High Amp Arc Ignition (HAI)			UL 746
0.750 mm	PLC 0		
1.50 mm	PLC 0		
3.00 mm	PLC 0		
High Voltage Arc Tracking Rate (HVTR), 3.00 mm	PLC 2		UL 746
Hot-wire Ignition (HWI)			UL 746
0.750 mm	PLC 4		
1.50 mm	PLC 4		
3.00 mm	PLC 3		

Flammability	Value	Unit	Test Standard
Flammability			UL 94
0.750 mm	HB		
1.50 mm	HB		
3.00 mm	HB		
Glow Wire Flammability Index			IEC 60695-2-12
0.750 mm	725	°C	
1.50 mm	750	°C	
3.00 mm	700	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.750 mm	750	°C	
1.50 mm	775	°C	
3.00 mm	725	°C	

Injection	Value	Unit
Drying Temperature	80	°C
Drying Time	4	h
Rear Temperature	280 - 310	°C
Middle Temperature	280 - 310	°C
Front Temperature	280 - 310	°C
Nozzle temperature	280 - 310	°C
Processing (Melt) Temperature	285 - 305	°C
Mold Temperature	65 - 95	°C

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