

Vydyne® 49H BK03

Ascend Performance Materials Operations LLC - Polyamide 66

General Information

Product Description

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

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 • Oil Resistant • Solvent Resistant
Agency Ratings	• ASTM D4066 PA0161	• ASTM D6779 PA0161	
Automotive Specifications	• APTIV M3592V • FORD WSS-M4D706-B1	• GM GMW16447P-PA66-T1 • MERCEDES BENZ DBL 1224 ¹	• VOLKSWAGEN 50180
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		
Resin ID	• PA66-I		

Properties ²

Physical	Dry	Conditioned	Unit	Test Method
Density	1.11	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	1.6	--	%	
Flow : 73°F, 0.0787 in	1.8	--	%	
Water Absorption (24 hr, 73°F)	1.3	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	2.3	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	435000	305000	psi	ISO 527-1
Tensile Stress (Yield, 73°F)	10200	7250	psi	ISO 527-2
Tensile Stress (Break, 73°F)	6670	6090	psi	ISO 527-2
Tensile Strain (Break, 73°F)	17	40	%	ISO 527-2
Flexural Modulus (73°F)	377000	131000	psi	ISO 178
Flexural Stress (73°F)	11700	3920	psi	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-40°F	3.8	2.9	ft·lb/in ²	
-22°F	5.2	4.8	ft·lb/in ²	
73°F	6.2	20	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	No Break	No Break		
73°F	No Break	No Break		
Notched Izod Impact Strength				ISO 180/1A
-40°F	3.8	4.8	ft·lb/in ²	
-22°F	4.3	7.1	ft·lb/in ²	



73°F	4.8	18	ft·lb/in ²	
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	396	--	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	156	--	°F	ISO 75-2/A
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	4.8E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	6.8E-5	--	in/in/°F	ISO 11359-2
RTI Elec				UL 746B
0.030 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
RTI Imp				UL 746B
0.030 in	167	--	°F	
0.06 in	167	--	°F	
0.12 in	167	--	°F	
RTI Str				UL 746B
0.030 in	230	--	°F	
0.06 in	230	--	°F	
0.12 in	230	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0394 in)	1.0E+11	--	ohms·cm	IEC 60093
Electric Strength (0.0394 in)	360	--	V/mil	IEC 60243-1
Arc Resistance (0.118 in)	PLC 6	--		ASTM D495
Comparative Tracking Index (0.118 in)	525	--	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 2	--		UL 746A
Hot-wire Ignition (HWI)				UL 746A
0.030 in	PLC 4	--		
0.06 in	PLC 4	--		
0.12 in	PLC 3	--		
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	1340	--	°F	
0.06 in	1380	--	°F	
0.12 in	1290	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.030 in	1380	--	°F	
0.06 in	1430	--	°F	
0.12 in	1340	--	°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

