

Vydyne® 41H BK03

Ascend Performance Materials Operations LLC - Polyamide 66

General Information
Product Description

Vydyne 41H BK03 is general-purpose, high impact-modified, heat stabilized PA66 resin. The product offers improved resistance to thermal degradation. 41H 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 • Good Processability	• Heat Stabilized • High Impact Resistance • Impact Modified • Low Temperature Impact Resistance	• Oil Resistant • Solvent Resistant
Agency Ratings	• ASTM D4066 PA0181	• ASTM D6779 PA0181	
Automotive Specifications	• BMW GS 93016 • FORD WSS-M4D666-B1 • FRANKLIN PRECISION PA66-HI	• GM GMW16447P-PA66-T3 • MAHLE BEHR SD2-384 Color: Para. 4.2 • STELLANTIS 01378_20_03357	• STELLANTIS MS-DB-41 CPN2565 • TESLA TM-1006 V3 101000D • VOLKSWAGEN 50180
UL File Number	• E70062		
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		
Resin ID	• PA66-I		

Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.08	--	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)	1.0	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	2.1	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	276000	131000	psi	ISO 527-1
Tensile Stress (Yield, 73°F)	7540	--	psi	ISO 527-2
Tensile Stress (Break, 73°F)	7110	5080	psi	ISO 527-2
Tensile Strain (Yield, 73°F)	17	--	%	ISO 527-2
Tensile Strain (Break, 73°F)	36	120	%	ISO 527-2
Flexural Modulus (73°F)	261000	72500	psi	ISO 178
Flexural Stress (73°F)	7690	2470	psi	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-40°F	9.5	12	ft·lb/in ²	
-22°F	17	12	ft·lb/in ²	
73°F	36	52	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	10	12	ft·lb/in ²	
-22°F	19	14	ft·lb/in ²	
73°F	37	42	ft·lb/in ²	
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	293	--	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	136	--	°F	ISO 75-2/A
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	9.3E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	8.3E-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	239	--	°F	
0.06 in	248	--	°F	
0.12 in	257	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0394 in)	1.0E+10	--	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)	600	--	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	1340	--	°F	
0.12 in	1250	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.030 in	1380	--	°F	
0.06 in	1380	--	°F	
0.12 in	1290	--	°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
Temperature		536 to 590 °F
(Melt) Temp		545 to 581 °F
ature		149 to 203 °F