Vydyne® 47H BK0644

Ascend Performance Materials Operations LLC - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Vydyne 47H BK0644 is a high-performance, medium-impact-modified, heat-stabilized PA66 resin with excellent UV stability and outstanding processing characteristics. This product has an UL 746C f1 rating, making it suitable for a variety of outdoor applications.

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 • Good Weather Resistance • Heat Stabilized • High Impact Resistance • Impact Modified	• Low Temperature Impact Resistance • 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	• CHRYSLER MS-DB-41 CPN 1826 • FORD ESB-M4D178-A2 • FORD WSK-M4D706-A	• FORD WSS-M4D706-B1 • GM GMP.PA66.015 • GM GMW16447P-PA66-T2	• HYUNDAI MS941-03 Type A-1
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density	1.10	--	g/cm³	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)	1.2	--	%	ISO 62
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	2.3	--	%	
Outdoor Suitability	f1	--		UL 746C
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (73°F)	403000	252000	psi	ISO 527-2
Tensile Stress (Yield, 73°F)	8700	6530	psi	ISO 527-2
Tensile Stress (Break, 73°F)	7540	5800	psi	ISO 527-2
Tensile Strain (Break, 73°F)	22	60	%	ISO 527-2
Flexural Modulus (73°F)	334000	113000	psi	ISO 178
Flexural Strength (73°F)	10200	3480	psi	ISO 178

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Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-40°F	5.2	8.6	ft·lb/in²	
-22°F	5.2	11	ft·lb/in²	
73°F	7.6	30	ft·lb/in²	
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
-40°F	5.7	8.6	ft·lb/in²	
-22°F	7.6	11	ft·lb/in²	
73°F	8.6	21	ft·lb/in²	

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	365	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	145	--	°F	
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	6.2E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	7.6E-5	--	in/in/°F	ISO 11359-2
RTI Elec				UL 746
0.030 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
RTI Imp				UL 746
0.030 in	167	--	°F	
0.06 in	167	--	°F	
0.12 in	167	--	°F	
RTI Str				UL 746
0.030 in	239	--	°F	
0.06 in	239	--	°F	
0.12 in	239	--	°F	

Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0295 in)	1.0E+11	--	ohms·cm	IEC 60093
Dielectric Strength (0.0394 in)	300	--	V/mil	IEC 60243
Arc Resistance	PLC 6	--		ASTM D495
Comparative Tracking Index				IEC 60112
0.118 in	525	--	V	
High Amp Arc Ignition (HAI)				UL 746
0.030 in	PLC 0	--		
0.06 in	PLC 0	--		
0.12 in	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 2	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.030 in	PLC 4	--		
0.06 in	PLC 4	--		
0.12 in	PLC 3	--		

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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	1430	--	°F	
0.12 in	1290	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.030 in	1340	--	°F	
0.06 in	1470	--	°F	
0.12 in	1340	--	°F	

Additional Information	Dry	Conditioned	Unit	Test Method
Automotive Materials - (thickness d = 1 mm)	+	--		FMVSS 302

Processing Information

Injection	Dry	Unit
Drying Temperature	176	°F
Drying Time	4.0	hr
Suggested Max Regrind	25	%
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

Notes

[1] Typical properties: these are not to be construed as specifications.