Vydyne® 47H BK0644 polyamide 66



Vydyne 47H BK0644 is a high performance, medium impact modified, heat stabilized PA66 with excellent UV stability and outstanding processing characteristics. This product currently has an UL746C "f1" rating making it suitable for a variety of outdoor applications.

Additive	Heat Stabilizer						
Features	 Abrasion Resistance 		 Chemical Resistant 		 Gasoline Resistant 		
	 General Purpose 		 Good Processability 		 Good Toughness 		
	Heat Stabilized		• High Impac	t Resistand	е	 Low Ter Resistance 	mperature Impact ce
	Low Temperature ToughnessWeatherable		Oil Resistar	nt		• Solvent	Resistant
Agency Rating	• ASTM, D4066 PA0161		• ASTM, D67	79 PA016	1	• SAE, J1	639 PA0171
Automotive Specifications	• Chery Motor Q- SQR.S1-33-2012 CMP.PA66.A2		• GM GMW1	6447P-PA6	36-T2	• VW VW	50180 (compliance
Appearance	• Black						
Forms	• Pellets						
Processing Method	Injection Molding						
Physical		dry		cond.	Uni	t	Test Standard
Density		1.10		-	g/c	:m³	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		1.2		*	%		

Mechanical	dry	cond.	Unit	Test Standard
Tensile Modulus (23°C)	2700	1000	MPa	ISO 527-2
Tensile Stress (Yield, 23°C)	61	38	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	57	38	MPa	ISO 527-2
Tensile Strain (Yield, 23°C)	5.6	41	%	ISO 527-2
Tensile Strain (Break, 23°C)	22	108	%	ISO 527-2
Flexural Modulus (23°C)	2300	800	MPa	ISO 178
Flexural Strength (23°C)	70	24	MPa	ISO 178

2.3

f1

%

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Equilibrium, 23°C, 50% RH

Outdoor Suitability

UL 746C

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Charpy Notched Impact Strength	Impact	dry	cond.	Unit	Test Standard
#23°C		,			
11		16	62	kl/m²	130 179/16A
Charpy Unnotched Impact Strength		_		-	
+23°C		11	Z-T	KJ/TIT-	100 170/1-11
-30°C N N N kJ/m² Notched Izod Impact Strength		N	N	kl/m²	150 179/160
Notched Izod Impact Strength				•	
+23°C 18 44 kJ/m² 30°C 16 24 kJ/m² 16 24 kJ/m² 16 24 kJ/m² 16 24 kJ/m² 17 termal dry cond. Unit Test Standar Heat Deflection Temperature ISO 75-2/A 1.80 MPa, Unannealed 63 - °C 150 11357-3 °C Melting Temperature 260 °C ISO 11357-3 °C ISO 11359-2 Flow: 23 to 55°C, 2.00 mm 110 °E-6/K Transverse: 23 to 55°C, 2.00 mm 140 °E-6/K ISO 11359-2 Flow: 23 to 55°C, 2.00 mm 130 °C UL 746 0.750 mm 130 °C UL 746 0.750 mm 130 °C UL 746 0.750 mm 75 °C UL 746 0.750 mm 75 °C Sloom 75 °C °C Sloom 115 °C °C °C °C Sloom 115 °C				NJ/111	ISO 180/1A
Thermal dry cond. Unit Test Standar Heat Deflection Temperature ISO 75-2/A 1.80 MPa, Unannealed 63 - °C 0.45 MPa, Unannealed 185 - °C Melting Temperature 260 • °C ISO 11357-3 CLTE ISO 11359-2 Flow: 23 to 55°C, 2.00 mm 110 • E-6/K Transverse: 23 to 55°C, 2.00 mm 140 • E-6/K RTI Elec UL 746 0.750 mm 130 °C 1.50 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 115 °C RTI Str UL 746 0.750 mm 115 °C RTI Str UL 746 0.750 mm 115 °C 1.50 mm 115 °C RTI Str UL 746 0.750 mm 115 °C 1.50 mm 115 °C 1		18	44	kl/m²	100 100/1/1
Thermal dry cond. Unit Test Standar Heat Deflection Temperature 1.80 MPa, Unannealed 0.45 MPa, Unannealed 185 - °C Melting Temperature 260 - °C ISO 11357-3 CLTE				_	
Heat Deflection Temperature				.g/	
1.80 MPa, Unannealed 63 - °C 0.45 MPa, Unannealed 185 - °C Melting Temperature 260 * °C ISO 11357-3 CLTE	Thermal	dry	cond.	Unit	Test Standard
0.45 MPa, Unannealed 185 - °C ISO 11357-3 CLTE ISO 11359-2 ISO 11359-2 ISO 11359-2 Flow: 23 to 55°C, 2.00 mm 110 * E-6/K Transverse: 23 to 55°C, 2.00 mm 140 * E-6/K RTI Elec UL 746 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 3.00 mm 75 °C 3.00 mm 115 °C 1.50 mm 115 °C 1.50 mm 115 °C 3.00 mm 115 °C 1.50 mm 115 °C 3.00 mm 115 °C 1.50 mm 115 °C 3.00 mm 12 Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 KV/mm IEC 60243 Arc Resistance (3.00 mm) 6 A	Heat Deflection Temperature				ISO 75-2/A
Melting Temperature 260 * °C ISO 11357-3 CLTE ISO 11359-2 ISO 11359-2 Flow: 23 to 55°C, 2.00 mm 110 * E-6/K Transverse: 23 to 55°C, 2.00 mm 140 * E-6/K RTI Elec UL 746 0.750 mm 130 °C 1.50 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 115 °C 1.50 mm 115 °C 1.50 mm 115 °C 3.00 mm 115 °C 4 column 115 °C 1.50 mm 115 °C 1.50 mm </td <td>1.80 MPa, Unannealed</td> <td>63</td> <td>-</td> <td>°C</td> <td></td>	1.80 MPa, Unannealed	63	-	°C	
Solid Soli	0.45 MPa, Unannealed	185	-	°C	
Flow: 23 to 55°C, 2.00 mm 110 * E-6/K Transverse: 23 to 55°C, 2.00 mm 140 * 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 1.50mm 75 °C RTI Str UL 746 0.750 mm 115 °C RTI Str UL 746 0.750 mm 115 °C 1.50 mm 115 °C 3.00 mm 115 °C Electrical dry cond. Unit Test Standar Volume Resistivity (1.00 mm) 1EC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60093 Arc Resistance (3.00 mm) 6 ASTM D 495	Melting Temperature	260	*	°C	ISO 11357-3
Transverse: 23 to 55°C, 2.00 mm 140 * 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 115 °C 1.50 mm 115 °C 3.00 mm 115 °C 4 Common of the	CLTE				ISO 11359-2
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 115 °C 1.50 mm 115 °C 3.00 mm 115 °C 4 Common of the comm	Flow: 23 to 55°C, 2.00 mm	110	*	E-6/K	
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 115 °C 1.50 mm 115 °C 3.00 mm 115 °C Electrical dry cond. Unit Test Standar Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	Transverse : 23 to 55°C, 2.00 mm	140	*	E-6/K	
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 115 °C 1.50 mm 115 °C 3.00 mm 115 °C Electrical dry cond. Unit Test Standar Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	RTI Elec				UL 746
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 115 °C 1.50 mm 115 °C 1.50 mm 115 °C 1.50 mm 115 °C 3.00 mm 115 °C Electrical dry cond. Unit Test Standar Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	0.750 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 115 °C 1.50 mm 115 °C 3.00 mm 115 °C Electrical dry cond. Unit Test Standar Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	1.50 mm	130		°C	
0.750 mm 75 °C 1.50mm 75 °C 3.00 mm 75 °C RTI Str UL 746 0.750 mm 115 °C 1.50 mm 115 °C 3.00 mm 115 °C Electrical dry cond. Unit Test Standard Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	3.00 mm	130		°C	
1.50mm 75 °C 3.00 mm 75 °C RTI Str UL 746 0.750 mm 115 °C 1.50 mm 115 °C 3.00 mm 115 °C Stelectrical dry cond. Unit Test Standard Test Standard Test Strength (1.00 mm) Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	RTI Imp				UL 746
3.00 mm 75 °C RTI Str UL 746 0.750 mm 115 °C 1.50 mm 115 °C 3.00 mm 115 °C Electrical dry cond. Unit Test Standard Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	0.750 mm	75		°C	
RTI Str	1.50mm	75		°C	
0.750 mm 115 °C 1.50 mm 115 °C 3.00 mm 115 °C Electrical dry cond. Unit Test Standard Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	3.00 mm	75		°C	
1.50 mm 115 °C 3.00 mm 115 °C Electrical dry cond. Unit Test Standar Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	RTI Str				UL 746
3.00 mm 115 °C Electrical dry cond. Unit Test Standar Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	0.750 mm	115		°C	
Electrical dry cond. Unit Test Standar Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	1.50 mm	115		°C	
Volume Resistivity (1.00 mm) 1E9 - Ohm*m IEC 60093 Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	3.00 mm	115		°C	
Dielectric Strength (1.00 mm) 12 - kV/mm IEC 60243 Arc Resistance (3.00 mm) 6 ASTM D 495	Electrical	dry	cond.	Unit	Test Standard
Arc Resistance (3.00 mm) 6 ASTM D 495	Volume Resistivity (1.00 mm)	1E9	-	Ohm*m	IEC 60093
	Dielectric Strength (1.00 mm)	12	-	kV/mm	IEC 60243
Comparative Tracking Index (3.00 mm) 525 V IEC 60112	Arc Resistance (3.00 mm)	6			ASTM D 495
	Comparative Tracking Index (3.00 mm)	525		V	IEC 60112

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High Amp Arc Ignition (HAI)

UL 746

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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	НВ		
1.50 mm	НВ		
3.00 mm	HB		
Glow Wire Flammability Index			IEC 60695-2-12
0.400 mm	700	°C	
0.750 mm	775	°C	
1.50 mm	700	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.400 mm	725	°C	
0.750 mm	800	°C	
1.50 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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