Vydyne® ECO366 BK13

Ascend Performance Materials Operations LLC - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Vydyne ECO366 BK13 is a non-halogenated, unfilled, flame-retardant PA66 homopolymer designed with superior flow properties to assist in filling thin-walled, intricate parts. It is lubricated for machine feed and easy mold release and has an Underwriters Laboratories UL 94 flammability classification of V-0 at 0.4 mm (0.016") thick.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Additive	• Flame Retardant	• Heat Stabilizer	• Lubricant
Features	• Crack Resistant • Ductile • Flame Retardant	• Good Mold Release • Good Toughness • Halogen Free	• Heat Stabilized • Low Density • Lubricated
Uses	• Appliances • Automotive Electronics • Bobbins • Connectors • Electrical Housing	• Electrical Parts • Electrical/Electronic Applications • Fasteners • Industrial Applications • Lighting Applications	• Living Hinges • Printed Circuit Boards • Switches
UL File Number	• E70062		
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density	1.17	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	1.2	--	%	
Flow : 73°F, 0.0787 in	0.90	--	%	
Water Absorption (24 hr, 73°F)	0.80	--	%	ISO 62
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	2.3	--	%	
Outdoor Suitability (Black)	f1	--		UL 746C
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Stress (Yield, 73°F)	12000	8410	psi	ISO 527-2
Tensile Strain (Break, 73°F)	5.0	6.0	%	ISO 527-2
Flexural Modulus (73°F)	566000	196000	psi	ISO 178
Flexural Strength (73°F)	15500	5660	psi	ISO 178
Poisson's Ratio	0.40	--		ISO 527-2
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	1.8	--	ft·lb/in²	
73°F	1.6	--	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	37	--	ft·lb/in²	
73°F	36	--	ft·lb/in²	

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Impact	Dry	Conditioned	Unit	Test Method
Notched Izod Impact Strength				ISO 180
73°F	2.9	--	ft·lb/in²	
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	464	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	167	--	°F	
Melting Temperature	509	--	°F	ISO 11357-3
RTI Elec				UL 746
0.016 in	248	--	°F	
0.030 in	248	--	°F	
0.06 in	248	--	°F	
0.12 in	248	--	°F	
RTI Imp				UL 746
0.016 in	167	--	°F	
0.030 in	176	--	°F	
0.06 in	176	--	°F	
0.12 in	176	--	°F	
RTI Str				UL 746
0.016 in	221	--	°F	
0.030 in	230	--	°F	
0.06 in	230	--	°F	
0.12 in	230	--	°F	
Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Volume Resistivity (0.0295 in)	1.0E+10	--	ohms·cm	IEC 60093
Dielectric Strength (0.0394 in)	430	--	V/mil	IEC 60243
Arc Resistance (0.118 in)	PLC 5	--		ASTM D495
Comparative Tracking Index				IEC 60112
0.118 in	600	--	V	
High Amp Arc Ignition (HAI)				UL 746
0.016 in	PLC 2	--		
0.030 in	PLC 1	--		
0.06 in	PLC 1	--		
0.12 in	PLC 1	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 0	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.016 in	PLC 4	--		
0.030 in	PLC 4	--		
0.06 in	PLC 3	--		
0.12 in	PLC 2	--		
Flammability	**Dry**	**Conditioned**	**Unit**	**Test Method**
Flame Rating				UL 94
0.016 in	V-0	--		
0.030 in	V-0	--		
0.06 in	V-0	--		
0.12 in	V-0	--		

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Flammability	Dry	Conditioned	Unit	Test Method
Glow Wire Flammability Index				IEC 60695-2-12
0.016 in	1760	--	°F	
0.030 in	1760	--	°F	
0.06 in	1760	--	°F	
0.12 in	1760	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.016 in	1760	--	°F	
0.030 in	1760	--	°F	
0.06 in	1290	--	°F	
0.12 in	1290	--	°F	
Oxygen Index	35	--	%	ISO 4589-2

Processing Information

Injection	Dry	Unit
Drying Temperature	176	°F
Drying Time	4.0	hr
Suggested Max Regrind	50	%
Rear Temperature	500 to 554	°F
Middle Temperature	500 to 554	°F
Front Temperature	500 to 554	°F
Nozzle Temperature	500 to 554	°F
Processing (Melt) Temp	518 to 545	°F
Mold Temperature	149 to 203	°F

Notes

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