

Vydyne® AVS1AF1 BK0781

Ascend Performance Materials Operations LLC - Polyamide 66

General Information

Product Description

Vydyne AVS1AF1 BK0781 is a 50% glass fiber reinforced, heat-stabilized PA66 designed for injection molding applications. AVS1AF1 BK0781 offers improved flow with a black surface finish and maintains the excellent resistance typical of PA66 in chemicals, machine and motor oils, solvents, and gasoline. Application targets include automotive mounts, brackets and suspension components. Vydyne AVS1AF1 BK0781 has been characterized in anisotropic tensile tests as well as anisotropic fatigue. Material data and models are available at Ascend Performance Materials and in Digimat®-MX.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 50% Filler by Weight		
Additive	• Heat Stabilizer		
Features	• Chemical Resistant • Creep Resistant • Fatigue Resistant • Good Dimensional Stability • Good Flow	• Good Heat Resistance • Good Processability • Good Stiffness • Good Strength • Grease Resistant	• Heat Aging Resistant • Heat Stabilized • High Rigidity • High Tensile Strength • Oil Resistant
Agency Ratings	• ASTM D4066	• ASTM D6779	
Automotive Specifications	• RENAULT RGS25A	• STELLANTIS 01378_22_03161	• TESLA TM-1006 V3 201150
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding		
Resin ID	• PA66-GF50		

Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.58	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	0.80	--	%	
Flow : 73°F, 0.0787 in	0.30	--	%	
Water Absorption (24 hr, 73°F)	0.50	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	1.2	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	2.44E+6	1.83E+6	psi	ISO 527-1
Tensile Stress (Break, 73°F)	34800	26100	psi	ISO 527-2
Tensile Strain (Break, 73°F)	2.5	3.5	%	ISO 527-2
Flexural Modulus (73°F)	2.32E+6	1.62E+6	psi	ISO 178
Flexural Stress (73°F)	50800	39200	psi	ISO 178
Poisson's Ratio (73°F)	0.40	--		ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	6.7	7.1	ft·lb/in ²	
73°F	7.1	10	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	43	45	ft·lb/in ²	
73°F	45	52	ft·lb/in ²	
Notched Izod Impact Strength				ISO 180/1A
-22°F	7.6	8.6	ft·lb/in ²	
73°F	8.1	10	ft·lb/in ²	



Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	500	--	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	491	--	°F	ISO 75-2/A
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	6.7E-6	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	5.6E-5	--	in/in/°F	ISO 11359-2
Flammability	Dry	Conditioned	Unit	Test Method
Burning Rate (0.0787 in)	0.0	--	in/min	ISO 3795

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

Notes

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

