

Vydyne® 21SPR

Ascend Performance Materials Operations LLC - *Polyamide 66*

General Information

Product Description

Vydyne 21SPR is a general-purpose, unfilled, PA66 resin with an performance lubricant. Designed principally for injection-molding applications, this product offers a combination of engineering properties characterized by high strength; rigidity; good toughness; 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	• Lubricant		
Features	• Abrasion Resistant • Chemical Resistant • Fast Molding Cycle • Gasoline Resistant	• General Purpose • Good Mold Release • Good Toughness • High Rigidity	• High Strength • Lubricated • Oil Resistant • Solvent Resistant
UL File Number	• E70062		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		
Resin ID	• PA66		

Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.14	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	1.7	--	%	
Flow : 73°F, 0.0787 in	1.8	--	%	
Water Absorption (24 hr, 73°F)	1.7	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	2.5	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	435000	247000	psi	ISO 527-1
Tensile Stress (Yield, 73°F)	11900	7690	psi	ISO 527-2
Tensile Stress (Break, 73°F)	7980	6530	psi	ISO 527-2
Tensile Strain (Yield, 73°F)	5.0	25	%	ISO 527-2
Tensile Strain (Break, 73°F)	33	46	%	ISO 527-2
Flexural Modulus (73°F)	421000	160000	psi	ISO 178
Flexural Stress (73°F)	13100	4350	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
-40°F	1.4	2.0	ft·lb/in ²	
-22°F	1.6	2.1	ft·lb/in ²	
73°F	2.3	3.9	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-40°F	No Break	No Break		
-22°F	No Break	No Break		
73°F	No Break	No Break		
Notched Izod Impact Strength				ISO 180/1A
-40°F	2.3	2.4	ft·lb/in ²	
-22°F	2.0	2.6	ft·lb/in ²	



73°F	2.1	3.0	ft·lb/in ²	
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	388	365	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	163	185	°F	ISO 75-2/A
Melting Temperature	504	--	°F	ISO 11357-3
RTI Elec				UL 746B
0.028 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
RTI Imp				UL 746B
0.028 in	167	--	°F	
0.06 in	167	--	°F	
0.12 in	167	--	°F	
RTI Str				UL 746B
0.028 in	185	--	°F	
0.06 in	185	--	°F	
0.12 in	185	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
High Amp Arc Ignition (HAI)				UL 746A
0.028 in	PLC 0	--		
0.06 in	PLC 0	--		
0.12 in	PLC 0	--		
Hot-wire Ignition (HWI)				UL 746A
0.028 in	PLC 4	--		
0.06 in	PLC 3	--		
0.12 in	PLC 3	--		
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.028 in	V-2	--		
0.06 in	V-2	--		
0.12 in	V-2	--		

Processing Information

Injection	Dry Unit
Drying Temperature	< 158 °F
Drying Time	1.0 to 3.0 hr
Rear Temperature	500 to 536 °F
Middle Temperature	518 to 545 °F
Front Temperature	536 to 554 °F
Nozzle Temperature	536 to 572 °F
Processing (Melt) Temp	545 to 572 °F
Mold Temperature	149 to 203 °F

