

Vydyne® 21SPC

polyamide 66



Vydyne 21SPC is a general-purpose, unfilled, lubricated, PA66 resin. Designed principally for injection-molding fabrication, 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.

21SPC is intended for use in high-productivity applications. In many applications, the molding cycle can be reduced because parts may be removed from the cavity at higher temperatures. In difficult molds where parts have a tendency to stick in the cavity, 21SPC can reduce or eliminate the need for mold release sprays. Critical molded-part dimensions should be checked against specifications before implementing shorter molding cycles on a routine production basis.

21SPC permits production of molded parts with good initial color plus good property and color retention when using regrind.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Additive	• Lubricant		
Features	• Abrasion Resistant	• General Purpose	• High Strength
	• Chemical Resistant	• Good Mold Release	• Lubricated
	• Fast Molding Cycle	• Good Toughness	• Oil Resistant
	• Gasoline Resistant	• High Rigidity	• Solvent Resistant
Uses	• Automotive Applications	• Connectors	• Housings • Industrial Applications
	• Bearings	• Electrical/Electronic Applications	
	• Bushings	• Fasteners	
	• Cams	• General Purpose	
Agency Ratings	• ASTM D4066 PA0111	• EU 2023/2006	• NSF STD-51 • SAE J1639 PA0121 Z6
	• ASTM D6779 PA0111	• FDA 21 CFR 177.1500	
	• EC 1935/2004	• FED L-P-410A	
	• EU 10/2011	• MIL M-20693B	
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• GM QK 002921	• TOYOTA TSM 5516G-2	
UL File Number	• E70062		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

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				ISO 62
24 hr, 73°F	1.2	--	%	
Equilibrium, 73°F, 50% RH	2.4	--	%	
Outdoor Suitability (All Colors)	f2	--		UL 746C
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	406000	261000	psi	ISO 527-1
Tensile Stress				ISO 527-2
Yield, 73°F	12500	8120	psi	
Break, 73°F	8120	6670	psi	
Tensile Strain (Yield, 73°F)	4.8	22	%	ISO 527-2
Nominal Tensile Strain at Break (73°F)	23	87	%	ISO 527-2
Flexural Modulus (73°F)	421000	218000	psi	ISO 178
Flexural Strength (73°F)	11600	7250	psi	ISO 178
Poisson's Ratio	0.40	--		ISO 527
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	2.4	3.3	ft·lb/in ²	
73°F	2.9	9.5	ft·lb/in ²	
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
-22°F	2.4	3.3	ft·lb/in ²	
73°F	2.9	9.5	ft·lb/in ²	

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
66 psi, Unannealed	392	--	°F	ISO 75-2/B
264 psi, Unannealed	158	--	°F	ISO 75-2/A
Melting Temperature	500	--	°F	ISO 11357-3
CLTE				ISO 11359-2
Flow : 73 to 131°F	5.6E-5	--	in/in/°F	
Transverse : 73 to 131°F	5.6E-5	--	in/in/°F	
RTI Elec				UL 746B
0.016 in	266	--	°F	
0.028 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
RTI Imp				UL 746B
0.016 in	167	--	°F	
0.028 in	167	--	°F	
0.06 in	167	--	°F	
0.12 in	167	--	°F	
RTI Str				UL 746B
0.016 in	167	--	°F	
0.028 in	185	--	°F	
0.06 in	185	--	°F	
0.12 in	185	--	°F	

Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0295 in)	1.0E+13	--	ohms-cm	IEC 60093
Dielectric Strength (0.0394 in)	660	--	V/mil	IEC 60243
Arc Resistance (0.118 in)	PLC 5	--		ASTM D495
Comparative Tracking Index (0.118 in)	600	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746A
0.016 in	PLC 1	--		
0.028 in	PLC 0	--		
0.06 in	PLC 0	--		
0.12 in	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 0	--		UL 746A
Hot-wire Ignition (HWI)				UL 746A
0.016 in	PLC 4	--		
0.028 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-2	--		
0.028 in	V-2	--		
0.06 in	V-2	--		
0.12 in	V-2	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.016 in	1760	--	°F	
0.028 in	1760	--	°F	
0.06 in	1760	--	°F	
0.12 in	1760	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.016 in	1520	--	°F	
0.028 in	1560	--	°F	
0.06 in	1560	--	°F	
0.12 in	1560	--	°F	
Oxygen Index	25	--	%	ISO 4589-2

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

Notes

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