

# Vydyne® 20NSP1

## polyamide 66



Vydyne 20NSP1

General				
Material Status	• Commercial: Active			
Availability	• Asia Pacific	• Europe	• North America	
Additive	• Lubricant	• Nucleating Agent		
Features	• Fast Molding Cycle • General Purpose • Good Mold Release	• Good Stiffness • High Rigidity • Lubricated	• Nucleated	
Uses	• Bearings • Cams • Connectors	• Electrical/Electronic Applications • Fasteners • General Purpose	• Housings • Industrial Applications	
Agency Ratings	• ASTM D4066 PA0131 • ASTM D6779 PA0131 • EC 1935/2004	• EU 10/2011 • EU 2023/2006 • FDA 21 CFR 177.1500	• FED L-P-410A	
RoHS Compliance	• RoHS Compliant			
UL File Number	• E70062			
Appearance	• Natural Color			
Forms	• Pellets			
Processing Method	• Injection Molding			
Physical	Dry	Conditioned	Unit	Test Method
Density	1.14	--	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 23°C, 2.00 mm	1.6	--	%	
Flow : 23°C, 2.00 mm	1.4	--	%	
Water Absorption				ISO 62
24 hr, 23°C	1.2	--	%	
Equilibrium, 23°C, 50% RH	2.4	--	%	
Outdoor Suitability (All Colors)	f2	--		UL 746C

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	3800	2500	MPa	ISO 527-2
Tensile Stress				ISO 527-2
Yield, 23°C	95.0	60.0	MPa	
Break, 23°C	75.0	50.0	MPa	
Tensile Strain (Yield, 23°C)	5.0	15	%	ISO 527-2
Nominal Tensile Strain at Break (23°C)	13	20	%	ISO 527-2
Flexural Modulus (23°C)	3200	1300	MPa	ISO 178
Flexural Strength (23°C)	100	35.0	MPa	ISO 178
Poisson's Ratio	0.40	--		ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	5.0	5.0	kJ/m <sup>2</sup>	
23°C	6.0	15	kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	No Break	No Break		
23°C	No Break	No Break		
Notched Izod Impact Strength				ISO 180
-30°C	5.0	5.0	kJ/m <sup>2</sup>	
23°C	6.0	15	kJ/m <sup>2</sup>	

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	230	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	90.0	--	°C	ISO 75-2/A
Melting Temperature	260	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C, 2.00 mm	1.0E-4	--	cm/cm/°C	
Transverse : 23 to 55°C, 2.00 mm	1.0E-4	--	cm/cm/°C	
RTI Elec				UL 746
0.71 mm	130	--	°C	
1.5 mm	130	--	°C	
3.0 mm	130	--	°C	
RTI Imp				UL 746
0.71 mm	75.0	--	°C	
1.5 mm	75.0	--	°C	
3.0 mm	75.0	--	°C	
RTI Str				UL 746
0.71 mm	85.0	--	°C	
1.5 mm	85.0	--	°C	
3.0 mm	85.0	--	°C	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.750 mm)	1.0E+13	--	ohms-cm	IEC 60093
Dielectric Strength (1.00 mm)	26	--	kV/mm	IEC 60243
Arc Resistance (3.00 mm)	PLC 5	--		ASTM D495
Comparative Tracking Index (3.00 mm)	600	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746
0.71 mm	PLC 0	--		
1.5 mm	PLC 0	--		
3.0 mm	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 0	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.71 mm	PLC 4	--		
1.5 mm	PLC 3	--		
3.0 mm	PLC 2	--		

Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.71 mm	V-2	--		
1.5 mm	V-2	--		
3.0 mm	V-2	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.71 mm	960	--	°C	
1.5 mm	960	--	°C	
3.0 mm	960	--	°C	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.71 mm	850	--	°C	
1.5 mm	850	--	°C	
3.0 mm	850	--	°C	
Oxygen Index	26	--	%	ISO 4589-2
Injection		Dry Unit		
Drying Temperature	< 70 °C			
Drying Time	1.0 to 3.0 hr			
Suggested Max Regrind	50 %			
Rear Temperature	260 to 280 °C			
Middle Temperature	270 to 285 °C			
Front Temperature	280 to 290 °C			
Nozzle Temperature	280 to 300 °C			
Processing (Melt) Temp	285 to 300 °C			
Mold Temperature	65 to 95 °C			

Notes

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

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