

# Vydyne® 22HSP NT

## polyamide 66



Vydyne 22HSP NT

General				
Material Status	• Commercial: Active			
Availability	• Asia Pacific	• Europe	• North America	
Additive	• Heat Stabilizer	• Lubricant		
Features	• Abrasion Resistant • Chemical Resistant • Fast Molding Cycle • Gasoline Resistant • General Purpose	• Good Mold Release • Good Toughness • Heat Stabilized • High Rigidity • High Strength	• Lubricated • Oil Resistant • Solvent Resistant	
Uses	• Bearings • Bushings • Cams • Connectors	• Electrical/Electronic Applications • Fasteners • General Purpose • Housings	• Industrial Applications • Valves/Valve Parts • Washer	
Agency Ratings	• ASTM D4066 PA0121 • ASTM D6779 PA0121	• FDA 21 CFR 177.1500 • FED L-P-410A	• MIL M-20693B	
RoHS Compliance	• RoHS Compliant			
Automotive Specifications	• CHRYSLER MS-DB-41 CPN 1076 • CHRYSLER MS-DB-41 CPN 3490 • DELPHI M-5507	• FORD WSK-M4D648-A • GM GMP.PA66.018 • GM GMW16036P-PA66	• GM QK 002921 • HYUNDAI MS941-03 Type A-1 FRV2	
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	2.0	--	%	
Flow : 23°C, 2.00 mm	2.2	--	%	
Water Absorption				ISO 62
24 hr, 23°C	1.2	--	%	
Equilibrium, 23°C, 50% RH	2.4	--	%	
Outdoor Suitability (Natural)	f1	--		UL 746C

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	3100	1800	MPa	ISO 527-2
Tensile Stress				ISO 527-2
Yield, 23°C	85.0	55.0	MPa	
Break, 23°C	55.0	40.0	MPa	
Tensile Strain (Yield, 23°C)	5.0	20	%	ISO 527-2
Nominal Tensile Strain at Break (23°C)	25	> 50	%	ISO 527-2
Flexural Modulus (23°C)	2900	1000	MPa	ISO 178
Flexural Strength (23°C)	95.0	30.0	MPa	ISO 178
Poisson's Ratio	0.40	--		ISO 527
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	5.0	7.0	kJ/m <sup>2</sup>	
23°C	6.0	20	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	7.0	kJ/m <sup>2</sup>	
23°C	6.0	20	kJ/m <sup>2</sup>	

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	200	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	70.0	--	°C	ISO 75-2/A
Melting Temperature	260	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C	1.0E-4	--	cm/cm/°C	
Transverse : 23 to 55°C	1.0E-4	--	cm/cm/°C	
RTI Elec				UL 746
0.71 mm	140	--	°C	
1.5 mm	140	--	°C	
3.0 mm	140	--	°C	
RTI Imp				UL 746
0.71 mm	95.0	--	°C	
1.5 mm	110	--	°C	
3.0 mm	110	--	°C	
RTI Str				UL 746
0.71 mm	115	--	°C	
1.5 mm	125	--	°C	
3.0 mm	125	--	°C	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.750 mm)	1.0E+18	--	ohms-cm	IEC 60093
Dielectric Strength (0.750 mm)	20	--	kV/mm	ASTM D149
Arc Resistance (3.00 mm)	PLC 6	--		ASTM D495
Comparative Tracking Index (3.00 mm)	400 to 599	--	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 4	--		
3.0 mm	PLC 4	--		

Flammability	Dry	Conditioned	Unit	Test Method
Burning Rate (2.00 mm, Self-Extinguishing)	0.0	--	mm/min	ISO 3795
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	825	--	°C	
1.5 mm	825	--	°C	
3.0 mm	960	--	°C	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.71 mm	700	--	°C	
1.5 mm	700	--	°C	
3.0 mm	700	--	°C	
Oxygen Index	24	--	%	ISO 4589-2
<b>Injection</b>	<b>Dry Unit</b>			
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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