

Vydyne® 20NSP BLK

Polyamide 66

Ascend Performance Materials Operations LLC

Message:

Vydyne 20NSP BLK is a general-purpose, highly nucleated, lubricated PA66 resin. Available in black, it is designed to crystallize rapidly in order to reduce cycle times and increase productivity through faster part set-up. The higher crystalline structure will increase tensile modulus and strength, reduce elongation and may slightly lower mold shrinkage when compared to standard general-purpose non nucleated PA66. The rapid crystallization of Vydyne 20NSP BLK resin may allow part ejection at a higher temperature compared to general-purpose PA66. Critical factors unique to each application such as mold design, part design, tolerances and other factors will dictate ultimate cycle time benefits. It is recommended to check critical part dimensions against specifications before adopting shorter molding cycles. Vydyne 20NSP BLK resin has an external lubricant for improved machine feed and an internal lubricant for improved mold release.

Typical Applications/End Uses:

End uses for Vydyne 20NSP BLK include terminal blocks, bearings, control cams, electrical connectors, housings, cable ties, fasteners, switch components and industrial parts that require chemical resistance, stiffness, wear resistance and rigidity.

General Information	
Additive	Lubricant
	Nucleating Agent
Features	Fast Molding Cycle
	General Purpose
	Good Mold Release
	Good Stiffness
	High Rigidity
	Lubricated
	Nucleated
Uses	Bearings
	Cams
	Connectors
	Fasteners
	General Purpose
	Housings
	Industrial Applications
Agency Ratings	ASTM D 4066 PA0131
	ASTM D 6779 PA0131
	FED L-P-410A
RoHS Compliance	RoHS Compliant
UL File Number	E70062
Appearance	Black
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 : 23°C, 2.00 mm	1.6	--	%	
Flow : 23°C, 2.00 mm	1.4	--	%	
Water Absorption				ISO 62
23°C, 24 hr	1.2	--	%	
Equilibrium, 23°C, 50% RH	2.4	--	%	
Outdoor Suitability				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 ²	
23°C	6.0	15	kJ/m ²	
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 ²	
23°C	6.0	15	kJ/m ²	
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
0.400 mm	130	--	°C	
0.710 mm	130	--	°C	
1.50 mm	130	--	°C	
3.00 mm	130	--	°C	
RTI Imp				UL 746
0.400 mm	75.0	--	°C	
0.710 mm	75.0	--	°C	
1.50 mm	75.0	--	°C	
3.00 mm	75.0	--	°C	
RTI Str				UL 746
0.400 mm	75.0	--	°C	
0.710 mm	85.0	--	°C	
1.50 mm	85.0	--	°C	
3.00 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
0.400 mm	PLC 1	--		
0.710 mm	PLC 0	--		
1.50 mm	PLC 0	--		
3.00 mm	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 0	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.400 mm	PLC 4	--		
0.710 mm	PLC 4	--		
1.50 mm	PLC 3	--		
3.00 mm	PLC 2	--		
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.400 mm	V-2	--		
0.710 mm	V-2	--		
1.50 mm	V-2	--		
3.00 mm	V-2	--		

Glow Wire Flammability Index				IEC 60695-2-12
0.400 mm	960	--	°C	
0.710 mm	960	--	°C	
1.50 mm	960	--	°C	
3.00 mm	960	--	°C	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.400 mm	825	--	°C	
0.710 mm	850	--	°C	
1.50 mm	850	--	°C	
3.00 mm	850	--	°C	
Oxygen Index	26	--	%	ISO 4589-2
Injection	Dry	Unit		
Drying Temperature	< 70.0		°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	65.0 to 95.0		°C	

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

