

Vydyne® 20NSP BLK

 Ascend Performance Materials Operations LLC - *Polyamide 66*
General Information
Product Description

Vydyne 20NSP BLK is a general-purpose, highly nucleated, lubricated PA66 resin with a further enhanced crystallization temperature. Designed to crystallize rapidly in order to reduce cycle times and increase productivity through faster part set-up.

General

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America
Additive	• Lubricant • Nucleating Agent
Features	• Fast Molding Cycle • Good Stiffness • Lubricated • General Purpose • High Rigidity • Nucleated • Good Mold Release • Highly Crystalline
Agency Ratings	• ASTM D4066 PA0131 • ASTM D6779 PA0131 • FED L-P-410A
Automotive Specifications	• TOYOTA TSM 5516G Color: Class 2, Rev 9
UL File Number	• E70062
Appearance	• Black
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	1.6	--	%	
Flow : 73°F, 0.0787 in	1.4	--	%	
Water Absorption (24 hr, 73°F)	1.2	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	2.4	--	%	ISO 62
Outdoor Suitability	f2	--		UL 746C
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	551000	363000	psi	ISO 527-1
Tensile Stress (Yield, 73°F)	13800	8700	psi	ISO 527-2
Tensile Stress (Break, 73°F)	10900	7250	psi	ISO 527-2
Tensile Strain (Yield, 73°F)	5.0	15	%	ISO 527-2
Tensile Strain (Break, 73°F)	13	20	%	ISO 527-2
Flexural Modulus (73°F)	464000	189000	psi	ISO 178
Flexural Stress (73°F)	14500	5080	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
-22°F	2.4	2.4	ft·lb/in ²	
73°F	2.9	7.1	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 180/1A
-22°F	2.4	2.4	ft·lb/in ²	
73°F	2.9	7.1	ft·lb/in ²	
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	446	--	°F	ISO 75-2/B



Deflection Temperature Under Load (264 psi, Unannealed)	194	--	°F	ISO 75-2/A
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	5.6E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	5.6E-5	--	in/in/°F	ISO 11359-2
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 (0.0394 in)	1.0E+13	--	ohms·cm	IEC 60093
Electric Strength (0.0394 in)	660	--	V/mil	IEC 60243-1
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) (0.118 in)	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	26	--	%	ISO 4589-2

Processing Information

Injection	Dry Unit			
Drying Temperature	158 °F			
Drying Time	1.0 to 3.0 hr			
Rear Temperature	500 to 536 °F			
Temperature	518 to 545 °F			
Temperature	536 to 554 °F			
Temperature	536 to 572 °F			
(Melt) Temp	545 to 572 °F			

Notes

¹ Typical properties: these are not to be construed as specifications.

