Vydyne® 20NSP1

Ascend Performance Materials Operations LLC - *Polyamide 66*

General Information

Product Description

Vydyne 20NSP1 is a general-purpose, highly nucleated, enhanced crystallization temperature PA66 resin with an alternate internal lubricant. 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 • General Purpose • Good Mold Release	• Good Stiffness • High Rigidity • Lubricated	• Nucleated
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
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		
Resin ID	• PA66		

Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density	1.14	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	1.7	--	%	
Flow : 73°F, 0.0787 in	1.3	--	%	
Water Absorption (24 hr, 73°F)	1.6	--	%	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)	493000	334000	psi	ISO 527-1
Tensile Stress (Yield, 73°F)	13800	9720	psi	ISO 527-2
Tensile Stress (Break, 73°F)	13100	9280	psi	ISO 527-2
Tensile Strain (Yield, 73°F)	5.2	18	%	ISO 527-2
Tensile Strain (Break, 73°F)	15	23	%	ISO 527-2
Flexural Modulus (73°F)	479000	174000	psi	ISO 178
Flexural Stress (73°F)	14900	4060	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
-40°F	1.4	1.4	ft·lb/in²	
-22°F	1.4	1.4	ft·lb/in²	
73°F	1.9	2.9	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-40°F	No Break	No Break		
-22°F	No Break	No Break		
73°F	No Break	No Break		
Notched Izod Impact Strength				ISO 180/1A
-40°F	1.4	1.9	ft·lb/in²	
-22°F	1.4	1.9	ft·lb/in²	

73°F	1.9	2.9	ft·lb/in²	
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Deflection Temperature Under Load (66 psi, Unannealed)	450	430	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	172	--	°F	ISO 75-2/A
Melting Temperature	504	--	°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
0.028 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
RTI Imp				UL 746B
0.028 in	167	--	°F	
0.06 in	167	--	°F	
0.12 in	167	--	°F	
RTI Str				UL 746B
0.028 in	185	--	°F	
0.06 in	185	--	°F	
0.12 in	185	--	°F	
Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
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
0.028 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
0.028 in	PLC 4	--		
0.06 in	PLC 3	--		
0.12 in	PLC 2	--		
Flammability	**Dry**	**Conditioned**	**Unit**	**Test Method**
Flame Rating				UL 94
0.028 in	V-2	--		
0.06 in	V-2	--		
0.12 in	V-2	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.028 in	1760	--	°F	
0.06 in	1760	--	°F	
0.12 in	1760	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.028 in	1560	--	°F	
0.06 in	1560	--	°F	
0.12 in	1560	--	°F	

Processing Information

Injection	**Dry**	**Unit**
Drying Temperature	176	°F
Drying Time	4.0	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