



Vydyne® 41 NT

Ascend Performance Materials Operations LLC - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Vydyne 41 NT is a general-purpose, impact-modified PA66 resin. Available in natural, it is recognized for all the processing and property advantages inherent to PA66 with the addition of improved impact strength. This resin offers a well balanced combination of engineering properties characterized by high melt point, good surface lubricity, abrasion resistance and resistance to many chemicals, machine and motor oils, solvents and gasoline. Vydyne 41 NT is designed to meet the critical low-temperature impact requirements called out in many automotive specifications.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Additive	• Impact Modifier		
Features	• Abrasion Resistant	• Good Processability	• Low Temperature Impact Resistance
	• Chemical Resistant	• High Impact Resistance	• Oil Resistant
	• Gasoline Resistant	• Impact Modified	• Solvent Resistant
Uses	• Automotive Applications	• Electrical/Electronic Applications	
	• Connectors	• Fasteners	• Industrial Applications
	• Consumer Applications	• Gears	
Agency Ratings	• ASTM D4066 PA0171	• ASTM D6779 PA0171	
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.08	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 0.0787 in	1.6	--	%	
Flow : 0.0787 in	1.8	--	%	
Water Absorption (24 hr, 73°F)	1.0	--	%	ISO 62
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	2.1	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	319000	201000	psi	ISO 527-2
Tensile Stress (Yield, 73°F)	7250	5080	psi	ISO 527-2
Tensile Stress (Break, 73°F)	6240	5660	psi	ISO 527-2
Tensile Strain (Break, 73°F)	50	180	%	ISO 527-2
Flexural Modulus (73°F)	254000	79000	psi	ISO 178
Flexural Stress (73°F)	7690	2470	psi	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-40°F	9.5	12	ft·lb/in ²	
-22°F	17	12	ft·lb/in ²	
73°F	36	53	ft·lb/in ²	

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Impact	Dry	Conditioned	Unit	Test Method
Charpy Unnotched Impact Strength				ISO 179
-22°F	No Break	No Break		
73°F	No Break	No Break		
Notched Izod Impact Strength				ISO 180
-40°F	10	12	ft·lb/in ²	
-22°F	19	14	ft·lb/in ²	
73°F	37	42	ft·lb/in ²	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	293	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	136	--	°F	
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	9.3E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	8.3E-5	--	in/in/°F	ISO 11359-2
RTI Elec				UL 746
0.030 in	257	--	°F	
0.06 in	257	--	°F	
0.12 in	257	--	°F	
RTI Imp				UL 746
0.030 in	167	--	°F	
0.06 in	167	--	°F	
0.12 in	167	--	°F	
RTI Str				UL 746
0.030 in	185	--	°F	
0.06 in	185	--	°F	
0.12 in	185	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0295 in)	1.0E+11	--	ohms·cm	IEC 60093
Dielectric Strength (0.0394 in)	660	--	V/mil	IEC 60243
Arc Resistance (0.118 in)	PLC 5	--		ASTM D495
Comparative Tracking Index				IEC 60112
0.118 in	600	--	V	
High Amp Arc Ignition (HAI)				UL 746
0.030 in	PLC 0	--		
0.06 in	PLC 0	--		
0.12 in	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 0	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.030 in	PLC 4	--		
0.06 in	PLC 3	--		
0.12 in	PLC 3	--		
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.030 in	HB	--		
0.06 in	HB	--		
0.12 in	HB	--		

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Flammability	Dry	Conditioned	Unit	Test Method
Glow Wire Flammability Index				IEC 60695-2-12
0.030 in	1380	--	°F	
0.06 in	1290	--	°F	
0.12 in	1290	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.030 in	1430	--	°F	
0.06 in	1340	--	°F	
0.12 in	1340	--	°F	
Additional Information	Dry	Conditioned	Unit	Test Method
Automotive Materials - (thickness d = 1 mm)	+	--		FMVSS 302

Processing Information

Injection	Dry	Unit
Drying Temperature	176	°F
Drying Time	4.0	hr
Suggested Max Regrind	25	%
Rear Temperature	536 to 590	°F
Middle Temperature	536 to 590	°F
Front Temperature	536 to 590	°F
Nozzle Temperature	536 to 590	°F
Processing (Melt) Temp	545 to 581	°F
Mold Temperature	149 to 203	°F

Notes

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