

Vydyne® 41 NT

polyamide 66



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.

Typical Applications/End Uses:

Vydyne 41 NT may be used in both industrial and automotive applications. Typical end uses include: clips, fasteners, engine gearing, cable ties, electrical connectors and many other parts that require high-impact properties. Vydyne 41 NT resin can in many cases be used as a metal replacement, offering improvements on abrasion resistance, reduction in part weight, greater processing flexibility and lower energy consumption.

General				
Material Status	• Commercial: Active			
Availability	• Asia Pacific	• Europe	• North America	
Additive	• Impact Modifier			
Features	• Gasoline Resistance • Good Abrasion Resistance • Good Chemical Resistance	• Good Processability • High Impact Resistance • Impact Modified	• Low Temperature Impact Resistance • Oil Resistant • Solvent Resistant	
Uses	• Automotive Applications • Connectors • Consumer Applications	• Electrical/Electronic Applications • Fasteners • Gears	• Industrial Applications	
Agency Ratings	• ASTM D 4066 PA0171	• ASTM D 6779 PA0171		
Appearance	• Natural Color			
Forms	• Pellets			
Processing Method	• Injection Molding			

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 (73°F, 24 hr)	1.0	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	2.1	--	%	ISO 62

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	270000	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	
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
0.0295 in	257	--	°F	
0.0591 in	257	--	°F	
0.118 in	257	--	°F	
RTI Imp				UL 746
0.0295 in	167	--	°F	
0.0591 in	167	--	°F	
0.118 in	167	--	°F	
RTI Str				UL 746
0.0295 in	185	--	°F	
0.0591 in	185	--	°F	
0.118 in	185	--	°F	

Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0295 in)	1.0E+11	--	ohm-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 (0.118 in)	600	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746
0.0295 in	PLC 0	--		
0.0591 in	PLC 0	--		
0.118 in	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 0	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.0295 in	PLC 4	--		
0.0591 in	PLC 3	--		
0.118 in	PLC 3	--		
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.0295 in	HB	--		
0.0591 in	HB	--		
0.118 in	HB	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.0295 in	1380	--	°F	
0.0591 in	1290	--	°F	
0.118 in	1290	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.0295 in	1430	--	°F	
0.0591 in	1340	--	°F	
0.118 in	1340	--	°F	
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

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