Vydyne® 41 NT

Ascend Performance Materials Operations LLC - *Polyamide 66*

General Information

Product Description

Vydyne 41 NT is a general-purpose, high impact-modified PA66 resin. The product 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. 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 • Chemical Resistant • Gasoline Resistant	• Good Processability • High Impact Resistance • Impact Modified	• Low Temperature Impact Resistance • Oil Resistant • Solvent Resistant
Agency Ratings	• ASTM D4066 PA0171	• ASTM D6779 PA0171	
Automotive Specifications	• AISIN TO20141124 - P-PA66-N-508		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		
Resin ID	• PA66-I		

Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density	1.08	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	1.6	--	%	
Flow : 73°F, 0.0787 in	1.8	--	%	
Water Absorption (24 hr, 73°F)	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)	319000	203000	psi	ISO 527-1
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)	261000	72500	psi	ISO 178
Flexural Stress (73°F)	7690	2470	psi	ISO 178
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	17	12	ft·lb/in²	
73°F	36	52	ft·lb/in²	
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	19	14	ft·lb/in²	
73°F	37	42	ft·lb/in²	
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Deflection Temperature Under Load (66 psi, Unannealed)	293	--	°F	ISO 75-2/B

Deflection Temperature Under Load (264 psi, Unannealed)	136	--	°F	ISO 75-2/A
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 746B
0.030 in	257	--	°F	
0.06 in	257	--	°F	
0.12 in	257	--	°F	
RTI Imp				UL 746B
0.030 in	167	--	°F	
0.06 in	167	--	°F	
0.12 in	167	--	°F	
RTI Str				UL 746B
0.030 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+11	--	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
0.030 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
0.030 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	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.016 in	1380	--	°F	
0.030 in	1290	--	°F	
0.06 in	1290	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.016 in	1430	--	°F	
0.030 in	1340	--	°F	
0.06 in	1340	--	°F	

Processing Information

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