



Vydyne® 47H NT

Ascend Performance Materials Operations LLC - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Vydyne 47H NT is general-purpose, impact-modified PA66 resin. Available in natural, it is heat-stabilized for improved resistance to elevated temperatures. The heat stabilization package for Vydyne 47H NT was formulated to provide thermal endurance when used in applications in which continuous or extended high-temperature exposure is anticipated.

Vydyne 47H NT 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 47H 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	• Heat Stabilizer	• Impact Modifier	
Features	• Abrasion Resistant • Chemical Resistant • Gasoline Resistant • General Purpose • Good Processability	• Good Toughness • Heat Stabilized • High Impact Resistance • Impact Modified • Low Temperature Impact Resistance	• Low Temperature Toughness • Oil Resistant • Solvent Resistant
Uses	• Automotive Applications • Connectors • Consumer Applications	• Electrical/Electronic Applications • Fasteners • Gears	• Industrial Applications
Agency Ratings	• ASTM D4066 PA0161	• ASTM D6779 PA0161	
Automotive Specifications	• CHRYSLER MS-DB-41 CPN 2055 • FORD ESB-M4D178-A2 • FORD WSK-M4D706-A	• FORD WSS-M4D706-B1 • GM GMP-PA66.015 • GM GMW16447P-PA66-T2	• HYUNDAI MS941-03 Type A-1
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.10	--	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)	1.2	--	%	ISO 62
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	2.3	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	403000	252000	psi	ISO 527-2
Tensile Stress (Yield)	8700	6530	psi	ISO 527-2
Tensile Stress (Break)	7540	5800	psi	ISO 527-2
Tensile Strain (Break)	22	60	%	ISO 527-2
Flexural Modulus	334000	113000	psi	ISO 178

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Mechanical	Dry	Conditioned	Unit	Test Method
Flexural Stress	10200	3480	psi	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-40°F	5.2	8.6	ft·lb/in ²	
-22°F	8.1	11	ft·lb/in ²	
73°F	9.0	30	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	5.7	8.6	ft·lb/in ²	
-22°F	7.6	11	ft·lb/in ²	
73°F	8.6	21	ft·lb/in ²	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	365	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	145	--	°F	
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	6.2E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	7.6E-5	--	in/in/°F	ISO 11359-2
RTI Elec				UL 746
0.030 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°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	239	--	°F	
0.06 in	239	--	°F	
0.12 in	239	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0295 in)	1.0E+11	--	ohms·cm	IEC 60093
Dielectric Strength (0.0394 in)	300	--	V/mil	IEC 60243
Arc Resistance	PLC 6	--		ASTM D495
Comparative Tracking Index				IEC 60112
0.118 in	525	--	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 2	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.030 in	PLC 4	--		
0.06 in	PLC 4	--		
0.12 in	PLC 3	--		

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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
0.030 in	1290	--	°F	
0.06 in	1430	--	°F	
0.12 in	1290	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.030 in	1340	--	°F	
0.06 in	1470	--	°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.