



Vydyne® R413H NT

Ascend Performance Materials Operations LLC - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Vydyne R413H NT is general-purpose, heat-stabilized, impact-modified, 15% glass-fiber reinforced PA66 resin. Available in natural, It is specifically designed to maximize toughness, while retaining physical properties. This product is also lubricated for improved flow and offers superior surface appearance.

Glass-fiber reinforced Vydyne resins provide higher heat distortion temperature, resistance to creep and better dimensional stability when compared with unreinforced PA66. These products have good chemical resistance to a broad range of chemicals including gasoline, hydraulic fluids and most solvents.

Typical Applications/End Uses:

Vydyne R413H NT is successfully used in a wide range of injection-molding engineering applications, including automotive clips, fasteners, brackets and carbon canisters; electrical connectors, housings, bobbins, etc.; and industrial gears, bearing shells, covers, housings, etc.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 15% Filler by Weight		
Additive	• Heat Stabilizer	• Impact Modifier	• Lubricant
Features	• Chemical Resistant	• Good Impact Resistance	• High Strength
	• Creep Resistant	• Good Mold Release	• High Tensile Strength
	• Gasoline Resistant	• Grease Resistant	• Lubricated
	• Good Dimensional Stability	• Heat Stabilized	• Oil Resistant
	• Good Flow	• High Rigidity	• Solvent Resistant
Uses	• Automotive Under the Hood	• Lawn and Garden Equipment	• Power/Other Tools
Agency Ratings	• ASTM D4066 PA016G15	• ASTM D6779 PA016G15	
	• ASTM D4066 PA018G15	• ASTM D6779 PA018G15	
Automotive Specifications	• DELPHI M-2279		
UL File Number	• E70062		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.21	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	0.80	--	%	
Flow : 73°F, 0.0787 in	0.70	--	%	
Water Absorption (24 hr, 73°F)	1.0	--	%	ISO 62
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	1.9	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	798000	595000	psi	ISO 527-2
Tensile Stress (Break, 73°F)	16000	11600	psi	ISO 527-2
Tensile Strain (Break, 73°F)	5.0	13	%	ISO 527-2
Flexural Modulus (73°F)	696000	406000	psi	ISO 178

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Mechanical	Dry	Conditioned	Unit	Test Method
Flexural Stress (73°F)	20300	10600	psi	ISO 178
Poisson's Ratio	0.40	--		ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-40°F	2.4	2.4	ft·lb/in ²	
-22°F	2.9	4.8	ft·lb/in ²	
73°F	5.7	8.6	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179
-22°F	36	33	ft·lb/in ²	
73°F	38	36	ft·lb/in ²	
Notched Izod Impact Strength				ISO 180
-40°F	4.3	4.3	ft·lb/in ²	
-22°F	4.8	4.8	ft·lb/in ²	
73°F	5.7	10	ft·lb/in ²	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	496	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	455	--	°F	
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	1.7E-5	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	6.2E-5	--	in/in/°F	ISO 11359-2
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0295 in)	1.0E+9	--	ohms·cm	IEC 60093
Dielectric Strength (0.0394 in)	76	--	V/mil	IEC 60243
Arc Resistance (0.118 in)	PLC 6	--		ASTM D495
Comparative Tracking Index				IEC 60112
0.118 in	400 to 599	--	V	
High Amp Arc Ignition (HAI)				UL 746
0.016 in	PLC 1	--		
0.030 in	PLC 1	--		
0.06 in	PLC 1	--		
0.12 in	PLC 1	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 3	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.016 in	PLC 4	--		
0.030 in	PLC 4	--		
0.06 in	PLC 4	--		
0.12 in	PLC 4	--		
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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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.