

# Vydyne® R413H NT

## polyamide 66



Vydyne R413H NT is general-purpose, heat-stabilized, impact-modified, 13% 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, 13% Filler by Weight			
Additive	• Lubricant			
Features	• Gasoline Resistance	• Good Impact Resistance	• High Tensile Strength	
	• Good Chemical Resistance	• Good Mold Release	• Lubricated	
	• Good Creep Resistance	• Grease Resistant	• Oil Resistant	
	• Good Dimensional Stability	• High Rigidity	• Solvent Resistant	
	• Good Flow	• High Strength		
Uses	• Automotive Under the Hood	• Housings	• Power/Other Tools	
	• Gears	• Lawn and Garden Equipment		
Agency Ratings	• ASTM D 4066 PA0161G15	• ASTM D 6779 PA0161G15		
UL File Number	• E70062			
Appearance	• Natural Color			
Forms	• Pellets			
Processing Method	• Injection Molding			
Physical	Dry	Conditioned	Unit	Test Method
Density	1.21	--	g/cm <sup>3</sup>	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 (73°F, 24 hr)	1.0	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	1.9	--	%	ISO 62

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
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 <sup>2</sup>	
-22°F	2.9	4.8	ft·lb/in <sup>2</sup>	
73°F	5.7	8.6	ft·lb/in <sup>2</sup>	
Charpy Unnotched Impact Strength				ISO 179
-22°F	38	33	ft·lb/in <sup>2</sup>	
73°F	36	36	ft·lb/in <sup>2</sup>	
Notched Izod Impact Strength				ISO 180
-40°F	4.3	4.3	ft·lb/in <sup>2</sup>	
-22°F	4.8	4.8	ft·lb/in <sup>2</sup>	
73°F	5.7	10	ft·lb/in <sup>2</sup>	
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	--	ohm·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 (0.118 in)	400 to 599	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746
0.0157 in	PLC 1	--		
0.0295 in	PLC 1	--		
0.0591 in	PLC 1	--		
0.118 in	PLC 1	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 3	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.0157 in	PLC 4	--		
0.0295 in	PLC 4	--		
0.0591 in	PLC 4	--		
0.118 in	PLC 4	--		
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.0295 in	HB	--		
0.0591 in	HB	--		
0.118 in	HB	--		
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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