

Vydyne® R550H NT453 polyamide 66



Vydyne R550H NT453 is general-purpose, heat-stabilized, hydrolysis-resistant, 50% glass-fiber reinforced PA66 resin. Available in natural, it is specifically designed to maximize the retention of physical properties when exposed to anti-freeze solutions at elevated temperatures. This product is also lubricated for improved flow and offers superior surface appearance.

Glass-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.

Vydyne R550H NT453 is heat-stabilized to minimize oxidative degradation of the polymer when exposed to elevated

temperatures in service. This product provides improved retention of physical properties under exposure to long term heat. Also, Vydyne R550H NT453 has excellent knit-line strength and fatigue resistance, which is essential for cycle testing with anti-freeze solutions.

Typical Applications/End Uses:

Vydyne R550H NT453 is successfully used in a wide range of injection-molding engineering applications. Typical parts include automotive clips, radiator endtanks and parts of the air-conditioning and fuel distribution systems; electrical connectors, housings and bobbins; and industrial applications such as gears, bearing shells, covers and housings.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 50% Filler by Weight		
Additive	• Heat Stabilizer	• Lubricant	
Features	• Good Flow • Good Mold Release	• Heat Stabilized • High Rigidity	• High Strength • Lubricated
Uses	• Automotive Under the Hood • Gears	• Housings • Power/Other Tools	
Agency Ratings	• ASTM D 4066 PA012G50	• ASTM D 6779 PA012G50	
Automotive Specifications	<ul style="list-style-type: none"> • 3M 11-0003-5762-1 • CHRYSLER MS-DB-41 CPN1900 Color: Black • CHRYSLER MS-DB-41 CPN2043 Color: Natural • CHRYSLER MS-DB-41 CPN2727 Color: Black • CHRYSLER MS-DB-41 CPN4014 Color: 100% Color Match • DAEWOO EDS-M-5165-02 	<ul style="list-style-type: none"> • FORD ESE-M4D287-A Color: Black • FORD ESE-M4D287-B • FORD ESE-M4D287-B Color: Black • FORD WSK-M4D663-A • FORD WSK-M4D663-A Color: Black • GM GMP.PA66.013 	<ul style="list-style-type: none"> • GM GMP.PA66.013 Color: Black • GM GMP.PA66.054 • GM GMP.PA66.054 Color: Black • SAE J1639 PA1116 • SAE J1639 PA1116 Color: Black • TagAZ TAMS-8729-01
UL File Number	• E70062		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

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Physical	Dry	Conditioned	Unit	Test Method
Density	1.58	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	0.90	--	%	
Flow : 73°F, 0.0787 in	0.40	--	%	
Water Absorption (73°F, 24 hr)	0.50	--	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	1.2	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	2.44E+6	2.21E+6	psi	ISO 527-2
Tensile Stress (Break, 73°F)	34800	27600	psi	ISO 527-2
Tensile Strain (Break, 73°F)	2.5	2.8	%	ISO 527-2
Flexural Modulus (73°F)	2.32E+6	1.63E+6	psi	ISO 178
Flexural Strength (73°F)	50800	39200	psi	ISO 178
Poisson's Ratio	0.40	--		ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	6.7	7.1	ft·lb/in ²	
73°F	7.1	10	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	43	45	ft·lb/in ²	
73°F	45	52	ft·lb/in ²	
Notched Izod Impact Strength				ISO 180
-22°F	7.6	8.6	ft·lb/in ²	
73°F	8.1	10	ft·lb/in ²	

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature 66 psi, Unannealed	500	--	°F	ISO 75-2/B
Heat Deflection Temperature 264 psi, Unannealed	491	--	°F	ISO 75-2/A
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	6.7E-6	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	5.6E-5	--	in/in/°F	ISO 11359-2
RTI Elec				UL 746
0.0295 in	284	--	°F	
0.0591 in	284	--	°F	
0.118 in	284	--	°F	
RTI Imp				UL 746
0.0295 in	266	--	°F	
0.0591 in	266	--	°F	
0.118 in	266	--	°F	
RTI Str				UL 746
0.0295 in	284	--	°F	
0.0591 in	284	--	°F	
0.118 in	284	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0295 in)	1.0E+12	--	ohm-cm	IEC 60093
Dielectric Strength (0.0394 in)	510	--	V/mil	IEC 60243
Arc Resistance (0.118 in)	PLC 5	--		ASTM D495
Comparative Tracking Index (0.118 in)	400 to 599	--	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 1	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.0295 in	PLC 4	--		
0.0591 in	PLC 3	--		
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	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.0295 in	1250	--	°F	
0.0591 in	1250	--	°F	
0.118 in	1760	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.0295 in	1290	--	°F	
0.0591 in	1290	--	°F	
0.118 in	1380	--	°F	
Additional Information	Dry	Conditioned	Unit	Test Method
Automotive Materials - (thickness d = 1 mm)	+	--		FMVSS 302
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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