Vydyne® R550H NT453

polyamide 66

Vydyne R550H NT453 is a general purpose, 50% glass-filled, heat-stabilized PA66 based resin designed for injection molding applications. R550H NT453 offers standard flow with a natural surface finish and maintains the excellent resistance typical of PA66 in chemicals, machine and motor oils, solvents, and gasoline.

General

Additive	• Heat Stabilizer	• Lubricant	
Features	• Creep Resistant • Heat Stabilized • Lubricated	• Good Flow • High Rigidity • Thermal Stability	• Good Mold Release • High Strength
Agency Rating	• ASTM, D6779 PA012G50 • EU, 2023/2006	• EC, 1935/2004 • FDA, 21 CFR 177.1500	• EU, 10/2011 • SAE, J1639 PA1116
Automotive Specifications	• GM GMW3038P-PA66-GF50H	• GM GMW3038P-PA66-GF50J	
UL File Number	• E70062		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

Physical	dry	cond.	Unit	Test Standard
Density	1.58	-	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 23°C, 2.00 mm	0.8	*	%	
Flow : 23°C, 2.00 mm	0.3	*	%	
Water Absorption				ISO 62
23°C, 24 hr	0.5	*	%	
Equilibrium, 23°C, 50% RH	1.2	*	%	

Mechanical	dry	cond.	Unit	Test Standard
Tensile Modulus (23°C)	16800	12600	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	240	180	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	2.5	3.5	%	ISO 527-2
Flexural Modulus (23°C)	16000	11200	MPa	ISO 178
Flexural Strength (23°C)	350	270	MPa	ISO 178
Poisson's Ratio (23°C)	0.4			ISO 527-2

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Impact	dry	cond.	Unit	Test Standard
Charpy Notched Impact Strength				ISO 179/1eA
+23°C	15	21	kJ/m²	
-30°C	14	15	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
+23°C	95	110	kJ/m²	
-30°C	91	95	kJ/m²	
Notched Izod Impact Strength				ISO 180/1A
+23°C	17	21	kJ/m²	
-30°C	16	18	kJ/m²	

Thermal	dry	cond.	Unit	Test Standard
Heat Deflection Temperature				ISO 75-2/A
1.80 MPa, Unannealed	255	-	°C	
0.45 MPa, Unannealed	260	-	°C	
Melting Temperature	260	*	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C, 2.00 mm	12	*	E-6/K	
Transverse : 23 to 55°C, 2.00 mm	100	*	E-6/K	
RTI Elec				UL 746
0.750 mm	140		°C	
1.50 mm	140		°C	
3.00 mm	140		°C	
RTI Imp				UL 746
0.750 mm	130		°C	
1.50mm	130		°C	
3.00 mm	130		°C	
RTI Str				UL 746
0.750 mm	140		°C	
1.50 mm	140		°C	
3.00 mm	140		°C	

Electrical	dry	cond.	Unit	Test Standard
Volume Resistivity (1.00 mm)	1E10	-	Ohm*m	IEC 60093
Dielectric Strength (1.00 mm)	20	-	kV/mm	IEC 60243
Arc Resistance (3.00 mm)	5			ASTM D 495
Comparative Tracking Index (3.00 mm)	400 - 599		V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746

0.750 mm	PLC 0		
1.50 mm	PLC 0		
3.00 mm	PLC 0		
High Voltage Arc Tracking Rate (HVTR), 3.00 mm	PLC 1		UL 746
Hot-wire Ignition (HWI)			UL 746
0.750 mm	PLC 4		
1.50 mm	PLC 3		
3.00 mm	PLC 4		

Flammability	Value	Unit	Test Standard
Burning Rate, 2.00 mm		mm/min	ISO 3795
Flammability			UL 94
0.750 mm	HB		
1.50 mm	HB		
3.00 mm	HB		
Glow Wire Flammability Index			IEC 60695-2-12
0.750 mm	675	°C	
1.50 mm	675	°C	
3.00 mm	960	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.750 mm	700	°C	
1.50 mm	700	°C	
3.00 mm	750	°C	

Injection	Value	Unit
Drying Temperature	80	°C
Drying Time	4	h
Rear Temperature	280 - 310	°C
Middle Temperature	280 - 310	°C
Front Temperature	280 - 310	°C
Nozzle temperature	280 - 310	°C
Processing (Melt) Temperature	285 - 305	°C
Mold Temperature	65 - 95	°C

North America
+1 888 927 2363

Europe
+32 10 608 600

Asia
+86 21 2315 0888

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