Vydyne® R543H NT

polyamide 66

Vydyne R543H NT is a general purpose, 43% glass-filled, heat-stabilized PA66 based resin designed for injection molding applications. R543H NT offers improved 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	• Chemical Resistant	• Creep Resistant	• Gasoline Resistant
	• Good Dimensional Stability	• Good Impact Strength	• Good Mold Release
	• Grease Resistant	• Heat Stabilized	• High Flow
	• High Rigidity	• High Strength	• High Tensile Strength
	• Lubricated	• Oil Resistant	• Solvent Resistant
Agency Rating	• ASTM, D4066 PA012G45	• ASTM, D6779 PA012G45	• EC, 1935/2004
	• EU, 10/2011	• EU, 2023/2006	• FDA, 21 CFR 177.1500
Automotive Specifications	• Aisin TO20141124 - P-PA66-GF45-802	• Northrop Grumman GP105AU09NH	• Toyota TSM5603G, Class 2C, Rev 5 (compliance)
UL File Number	• E70062		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

Physical	dry	cond.	Unit	Test Standard
Density	1.50	-	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 23°C, 2.00 mm	0.9	*	%	
Flow : 23°C, 2.00 mm	0.4	*	%	
Water Absorption				ISO 62
23°C, 24 hr	0.6	*	%	
Equilibrium, 23°C, 50% RH	1.5	*	%	

Mechanical	dry	cond.	Unit	Test Standard
Tensile Modulus (23°C)	14800	11300	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	225	170	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	3	4	%	ISO 527-2
Flexural Modulus (23°C)	12500	9400	MPa	ISO 178
Flexural Strength (23°C)	340	250	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	14	20	kJ/m²	
-30°C	13	14	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
+23°C	92	95	kJ/m²	
-30°C	87	90	kJ/m²	
Notched Izod Impact Strength				ISO 180/1A
+23°C	13	19	kJ/m²	
-30°C	13	13	kJ/m²	

Thermal	dry	cond.	Unit	Test Standard
Heat Deflection Temperature				ISO 75-2/A
1.80 MPa, Unannealed	252	-	°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	16	*	E-6/K	
Transverse : 23 to 55°C, 2.00 mm	102	*	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	dry	cond.	Unit	Test Standard
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	
Oxygen index	25	*	%	EN ISO 4589-2

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

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