

Vydyne® R533H NAT

polyamide 66



Vydyne R533H NAT is a general purpose, 33% glass-filled, heat-stabilized, high viscosity PA66 based resin designed for injection molding applications. R533H NAT 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

Regional Availability	• North America	• Europe	• Asia Pacific
Additive	• Heat Stabilizer	• Lubricant	
Features	• Good Flow • High Rigidity	• Good Mold Release • High Strength	• Heat Stabilized • Lubricated
Agency Rating	• ASTM, D4066 PA012G35 • EU, 10/2011 • SAE, J1639 PA1116	• ASTM, D6779 PA012G35 • EU, 2023/2006	• EC, 1935/2004 • FDA, 21 CFR 177.1500
Automotive Specifications	• Chrysler MS-DB-41_CPN 2043 • Toyota TSM5603G-2B (compliance)	• Delphi M4692V	• Northrop Grumman GP105AU09NH
UL File Number	• E70062		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

Physical

	dry	cond.	Unit	Test Standard
Density	1.40	-	g/cm ³	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	0.8	*	%	
Equilibrium, 23°C, 50% RH	1.7	*	%	

Mechanical

	dry	cond.	Unit	Test Standard
Tensile Modulus (23°C)	10600	7900	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	205	145	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	3	5	%	ISO 527-2
Flexural Modulus (23°C)	10200	6500	MPa	ISO 178
Flexural Strength (23°C)	290	200	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	11	14	kJ/m ²	
-30°C	10	12	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
+23°C	80	90	kJ/m ²	
-30°C	70	85	kJ/m ²	
Notched Izod Impact Strength				ISO 180/1A
+23°C	12	14	kJ/m ²	
-30°C	10	12	kJ/m ²	

Thermal	dry	cond.	Unit	Test Standard
Heat Deflection Temperature				ISO 75-2/A
1.80 MPa, Unannealed	250	-	°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	21	*	E-6/K	
Transverse : 23 to 55°C, 2.00 mm	110	*	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	125		°C	
1.50mm	125		°C	
3.00 mm	125		°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)	1E11	-	Ohm*m	IEC 60093
Dielectric Strength (1.00 mm)	20	-	kV/mm	IEC 60243
Arc Resistance (3.00 mm)	6		-	ASTM D 495
Comparative Tracking Index (3.00 mm)	250 - 399		V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746

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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
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	725	°C	
1.50 mm	700	°C	
3.00 mm	875	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.750 mm	750	°C	
1.50 mm	725	°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

