

Vydyne® R533 NAT

polyamide 66



Vydyne R533 NAT is a general purpose, 33% glass-filled, high viscosity PA66 based resin designed for injection molding applications. R533 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	• Lubricant		
Features	• Chemical Resistant • Good Electrical Properties • High Rigidity • Non-Corrosive	• Corrosion Resistant • Good Flow • High Strength	• Good Dimensional Stability • Good Mold Release • Lubricated
Agency Rating	• ASTM, D4066 PA011G35 • EU, 10/2011 • NSF, STD-51	• ASTM, D6779 PA011G35 • EU, 2023/2006	• EC, 1935/2004 • FDA, 21 CFR 177.1500
Automotive Specifications	• Chrysler MS-DB-41_CPN 1853		
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	13	17	kJ/m²	
-30°C	11	11	kJ/m²	
-40°C	11	11	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
+23°C	86	100	kJ/m²	
-30°C	71	77	kJ/m²	
-40°C	69	75	kJ/m²	
Notched Izod Impact Strength				ISO 180/1A
+23°C	12	16	kJ/m²	
-30°C	10	12	kJ/m²	
-40°C	10	11	kJ/m²	
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	106	*	E-6/K	
RTI Elec				UL 746
0.750 mm	120		°C	
1.50 mm	120		°C	
3.00 mm	120		°C	
RTI Imp				UL 746
0.750 mm	100		°C	
1.50mm	100		°C	
3.00 mm	105		°C	
RTI Str				UL 746
0.750 mm	125		°C	
1.50 mm	125		°C	
3.00 mm	125		°C	
Electrical	dry	cond.	Unit	Test Standard
Volume Resistivity (1.00 mm)	1E12	-	Ohm*m	IEC 60093
Dielectric Strength (1.00 mm)	20	-	kV/mm	IEC 60243
Arc Resistance (3.00 mm)	5	-	-	ASTM D 495

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Comparative Tracking Index (3.00 mm)	600	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 4	-	
3.00 mm	PLC 3	-	

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	750	°C	
1.50 mm	725	°C	
3.00 mm	800	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.750 mm	775	°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

