

Vydyne® R533

Polyamide 66

Ascend Performance Materials Operations LLC

TechnicalData

Product Description

Vydyne R533 is general-purpose, 33% glass-fiber reinforced PA66 resin. Available in natural, it is an injection-molding grade that is lubricated for good machine feed, flow and mold release.

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 R533 resin has tensile strength and modulus properties just below aluminum and zinc and can replace these metals in numerous applications due to an excellent balance of properties. Reduction in production costs, energy consumption and part weight are key advantages of Vydyne glass-fiber reinforced PA66 resins over aluminum and/or zinc die-cast parts.

Typical Applications/End Uses:

Vydyne R533 resin has been used for many under-the-hood automotive applications, motor housings for power tools and garden appliances. These resins have also been used in miscellaneous brackets, gears and clips that require high rigidity and strength.

General

MaterialStatus	•Commercial:Active		
Literature 1	• TechnicalDatasheet		
ULYellowCard 2	• E70062-249084		
SearchforULYellowCard	• AscendPerformanceMaterialsOperationsLLC • Vydyne®		
Availability	•AsiaPacific	•Europe	•NorthAmerica
Filler/Reinforcement	•GlassFiber,33%FillerbyWeight		
Additive	•Lubricant		
Features	•GoodFlow •GoodMoldRelease	•HighRigidity •HighStrength	•Lubricated
Uses	•AutomotiveUndertheHood •Gears	•Housings •Power/OtherTools	
AgencyRatings	•ASTMD4066PA0111G35	•ASTMD6779PA0111G35	
ULFileNumber	•E70062		
Appearance	•NaturalColor		
Forms	•Pellets		
ProcessingMethod	•InjectionMolding		

Physical	Dry	Conditioned	Unit	TestMethod
Density	1.40	--	g/cm ³	ISO1183
MoldingShrinkage				ISO294-4
AcrossFlow:23°C,2.00mm	0.90	--	%	
Flow:23°C,2.00mm	0.40	--	%	
WaterAbsorption				ISO62
23°C,24hr	0.80	--	%	
Equilibrium,23°C,50%RH	1.7	--	%	
Mechanical	Dry	Conditioned	Unit	TestMethod
TensileModulus(23°C)	10600	7900	MPa	ISO527-2
TensileStress(Break,23°C)	205	145	MPa	ISO527-2
TensileStrain(Break,23°C)	3.0	5.0	%	ISO527-2
FlexuralModulus(23°C)	10200	6500	MPa	ISO178
FlexuralStress(23°C)	290	200	MPa	ISO178
Poisson'sRatio	0.40	--		ISO527-2

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Impact	Dry	Conditioned	Unit	TestMethod
Charpy Notched Impact Strength				ISO 179
-30°C	10	12	kJ/m²	
23°C	11	14	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179
-30°C	70	85	kJ/m²	
23°C	80	90	kJ/m²	
Notched Izod Impact Strength				ISO 180
-30°C	10	12	kJ/m²	
23°C	12	14	kJ/m²	
Thermal	Dry	Conditioned	Unit	TestMethod
Heat Deflection Temperature				ISO 75-2/B
0.45 MPa, Unannealed	260	--	°C	ISO 75-2/A
1.8 MPa, Unannealed	250	--	°C	ISO 11357-
Melting Temperature	260	--	°C	3 ISO
CLTE				11359-2
Flow : 23 to 55°C, 2.00 mm	2.1E-5	--	cm/cm/°C	
Transverse : 23 to 55°C, 2.00 mm	1.1E-4	--	m/cm/°C	
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	
1.50 mm	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	Conditioned	Unit	TestMethod
Volume Resistivity (3.00 mm)	1.0E+14	--	ohm-cm	IEC 60093
Dielectric Strength (1.00 mm)	20	--	kV/mm	IEC 60243
Arc Resistance (3.00 mm)	PLC5	--		ASTM D495
Comparative Tracking Index (3.00 mm)	600	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746
0.750 mm	PLC0	--		
1.50 mm	PLC0	--		
3.00 mm	PLC0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC1	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.750 mm	PLC4	--		
1.50 mm	PLC4	--		
3.00 mm	PLC4	--		
Flammability	Dry	Conditioned	Unit	TestMethod
Flame Rating				UL94
0.750 mm	HB	--		
1.50 mm	HB	--		
3.00 mm	HB	--		

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Injection	Dry Unit
Drying Temperature	80.0 °C
Drying Time	4.0 hr
Suggested Max Regrind	50%
Rear Temperature	280 to 310 °C
Middle Temperature	280 to 310 °C
Front Temperature	280 to 310 °C
Nozzle Temperature	280 to 310 °C
Processing (Melt) Temp	285 to 305 °C
Mold Temperature	65.0 to 95.0 °C

Notes

- ¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.
- ² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.
- ³ Typical properties: these are not to be construed as specifications.



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Where to Buy

Supplier

Ascend Performance Materials Operations LLC
Houston, TX USA

Telephone: 888-927-2363

Web: <http://www.ascendmaterials.com/>

Distributor

Channel Prime Alliance

Telephone: 800-247-8038

Web: <http://www.channelpa.com/>

Availability: North America

Chase Plastic Services, Inc.

Chase Plastics Services is a North American distributor with representatives throughout the region. Please find your rep here:

<http://www.chaseplastics.com/contact/locations>

Telephone: 800-232-4273

Web: <http://www.chaseplastics.com/>

Availability: North America

Entec Polymers

Telephone: 800-375-5440

Web: <http://www.entecpolymers.com/>

Availability: North America

GAZECHIM PLASTIQUES

GAZECHIM PLASTIQUES is a Pan European distribution company. Contact GAZECHIM PLASTIQUES for availability of individual products by country.

Telephone: +33-4-67-49-55-37

Web: <http://www.gazechim.com/>

Availability: Belgium, Czech Republic, Denmark, Finland, France, Italy, Netherlands, Norway, Poland, Romania, Slovakia, Spain, Sweden, United Kingdom

Nexeo Solutions - Europe

Nexeo Solutions is a Pan European distribution company. Contact Nexeo for availability of individual products by country.

Telephone: +34-93-480-9125

Web: <http://www.nexeosolutions.com/>

Availability: Italy

Ultrapolymers

Ultrapolymers is a Pan European distribution company. Contact Ultrapolymers for availability of individual products by country.

Telephone: +32-11-57-95-57

Web: <http://www.ultrapolymers.com/>

Availability: Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Macedonia, Netherlands, Norway, Romania, Serbia, Slovakia, Slovenia, South Africa, Spain, Sweden, Turkey, United Kingdom