Vydyne® R550H NT0687

Ascend Performance Materials Operations LLC - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Vydyne R550H NT0687 is a general-purpose, high-flow, heat-stabilized 50% glass-fiber reinforced PA66 resin. Available in natural, it is specifically designed to maximize the retention of physical properties when exposed to anti-freeze solutions at elevated temperatures. This product is also lubricated for improved flow and offers superior appearance.

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 R550H NT0687 is heat-stabilized to minimize oxidative degradation of the polymer when exposed to elevated temperatures in service. This product provides improved retention of physical properties under exposure to long term heat. Also, Vydyne R550H NT0687 has excellent knit-line strength and fatigue resistance, which is essential for cycle testing with anti-freeze solutions.

Typical Applications/End Uses:
Vydyne R550H NT0687 is successfully used in a wide range of injection-molding engineering applications. Typical parts include automotive clips, radiator end-tanks and parts of the air-conditioning and fuel distribution systems; electrical connectors, housings, and bobbins; and industrial applications such as gears, bearing shells, covers and housings.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 50% Filler by Weight		
Additive	• Heat Stabilizer	• Lubricant	
Features	• Good Mold Release • Heat Stabilized	• High Flow • High Rigidity	• High Strength • Lubricated
Uses	• Automotive Under the Hood	• Gears	
Agency Ratings	• ASTM D4066 PA012G50 • ASTM D6779 PA012G50	• EC 1935/2004 • EU 10/2011	• EU 2023/2006 • FDA 21 CFR 177.1500
Automotive Specifications	• GM GMW3038P-PA66-GF50H	• GM GMW3038P-PA66-GF50J	
UL File Number	• E70062		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density	1.58	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow : 73°F, 0.0787 in	0.50	--	%	
Flow : 73°F, 0.0787 in	0.040	--	%	
Water Absorption (24 hr, 73°F)	0.50	--	%	ISO 62
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	1.2	--	%	
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (73°F)	2.44E+6	1.83E+6	psi	ISO 527-2
Tensile Stress (Break, 73°F)	34800	26100	psi	ISO 527-2

Vydyne® R550H NT0687

Ascend Performance Materials Operations LLC - Polyamide 66

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Strain (Break, 73°F)	2.5	3.5	%	ISO 527-2
Flexural Modulus (73°F)	2.32E+6	1.63E+6	psi	ISO 178
Flexural Strength (73°F)	50800	39200	psi	ISO 178
Poisson's Ratio	0.40	--		ISO 527-2
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	6.7	7.1	ft·lb/in²	
73°F	7.1	10	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F	43	45	ft·lb/in²	
73°F	45	52	ft·lb/in²	
Notched Izod Impact Strength				ISO 180
-22°F	7.6	8.6	ft·lb/in²	
73°F	8.1	10	ft·lb/in²	
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	500	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	491	--	°F	
Melting Temperature	500	--	°F	ISO 11357-3
CLTE - Flow (73 to 131°F, 0.0787 in)	9.4E-6	--	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F, 0.0787 in)	4.0E-5	--	in/in/°F	ISO 11359-2
RTI Elec				UL 746
0.030 in	284	--	°F	
0.06 in	284	--	°F	
0.12 in	284	--	°F	
RTI Imp				UL 746
0.030 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
RTI Str				UL 746
0.030 in	284	--	°F	
0.06 in	284	--	°F	
0.12 in	284	--	°F	
Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Volume Resistivity (0.0295 in)	1.0E+12	--	ohms·cm	IEC 60093
Dielectric Strength (0.0394 in)	510	--	V/mil	IEC 60243
Arc Resistance (0.118 in)	PLC 5	--		ASTM D495
Comparative Tracking Index				IEC 60112
0.118 in	400 to 599	--	V	
High Amp Arc Ignition (HAI)				UL 746
0.030 in	PLC 0	--		
0.06 in	PLC 0	--		
0.12 in	PLC 0	--		
High Voltage Arc Tracking Rate (HVTR)	PLC 1	--		UL 746
Hot-wire Ignition (HWI)				UL 746
0.030 in	PLC 4	--		
0.06 in	PLC 3	--		
0.12 in	PLC 4	--		

Vydyne® R550H NT0687
Ascend Performance Materials Operations LLC - Polyamide 66

Flammability	Dry	Conditioned	Unit	Test Method
Burning Rate				ISO 3795
0.0787 in, Self-Extinguishing	0.0	--	in/min	
Flame Rating				UL 94
0.030 in	HB	--		
0.06 in	HB	--		
0.12 in	HB	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.030 in	1250	--	°F	
0.06 in	1250	--	°F	
0.12 in	1760	--	°F	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.030 in	1290	--	°F	
0.06 in	1290	--	°F	
0.12 in	1380	--	°F	

Processing Information

Injection	Dry	Unit
Drying Temperature	176	°F
Drying Time	4.0	hr
Suggested Max Regrind	25	%
Rear Temperature	536 to 590	°F
Middle Temperature	536 to 590	°F
Front Temperature	536 to 590	°F
Nozzle Temperature	536 to 590	°F
Processing (Melt) Temp	545 to 581	°F
Mold Temperature	149 to 203	°F

Notes

[1] Typical properties: these are not to be construed as specifications.