Product Comparison

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Technical Data

Product Description	
Vydyne® R530H BK02 (Dry)	Vydyne R530H BK02 is a general purpose, 30% glass-filled, heat-stabilized PA66 based resin designed for injection molding applications. R530H BK02 offers improved flow with a black surface finish and maintains the excellent resistance typical of PA66 in chemicals, machine and motor oils, solvents, and gasoline.
Generic Nylon 66 - Glass Fiber	This data represents typical values that have been calculated from all products classified as: Generic Nylon 66 - Glass Fiber This information is provided for comparative purposes only.

General	Vydyne® R530H BK02 (Dry)	Generic Nylon 66 - Glass Fiber
Manufacturer / Supplier	• Ascend Performance Materials Operations LLC	• Generic
Generic Symbol	• Nylon 66	• Nylon 66
Material Status	• Commercial: Active	• Commercial: Active
UL Yellow Card [1]	• E70062-249083	--
Search for UL Yellow Card	• Ascend Performance Materials Operations LLC • Vydyne®	--
Availability	• Asia Pacific • Europe • North America	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight	• Glass Fiber
Additive	• Heat Stabilizer • Lubricant	--
Features	• Antifreeze Resistant • Chemical Resistant • Fatigue Resistant • Gasoline Resistant • Heat Stabilized • High Flow • Hydrolysis Resistant • Lubricated • Solvent Resistant	--
Agency Ratings	• ASTM D4066 PA012G30 • ASTM D6779 PA012G30	--

General	Vydyne® R530H BK02 (Dry)	Generic Nylon 66 - Glass Fiber
UL File Number	• E70062	--
Appearance	• Black	--
Forms	• Pellets	--
Processing Method	• Injection Molding	--
Resin ID	• PA66-GF30	--

Physical	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
Density / Specific Gravity					
--	--	--	1.18 to 1.58	g/cm³	ASTM D792
--	1.37	--	1.19 to 1.58	g/cm³	ISO 1183
Apparent (Bulk) Density	--	--	0.70 to 0.71	g/cm³	ISO 60
Melt Mass-Flow Rate (MFR)					
275°C/2.16 kg	--	--	6.0 to 31	g/10 min	ASTM D1238
275°C/0.325 kg	--	--	1.0 to 3.1	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	--	--	10 to 51	cm³/10min	ISO 1133
Spiral Flow	--	--	7.30 to 52.0	cm	
Molding Shrinkage					
Flow	--	--	0.10 to 6.4	%	ASTM D955
Across Flow	--	--	0.35 to 2.0	%	ASTM D955
--	--	--	3.0E-3 to 1.2	%	ISO 294-4
Across Flow : 23°C, 2.00 mm	0.90	--	--	%	ISO 294-4
Flow : 23°C, 2.00 mm	0.40	--	--	%	ISO 294-4
Water Absorption					
24 hr	--	--	0.23 to 1.0	%	ASTM D570
24 hr, 23°C	0.90	--	0.23 to 1.1	%	ISO 62
Saturation	--	--	0.010 to 6.1	%	ASTM D570
Saturation, 23°C	--	--	3.9 to 7.1	%	ISO 62
Equilibrium	--	--	0.79 to 2.2	%	ASTM D570
Equilibrium, 23°C, 50% RH	1.9	--	0.93 to 2.2	%	ISO 62

Physical	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
K-Value	--	--	75.9 to 76.1		ISO 1628-2
Viscosity Number (Reduced Viscosity)	--	--	143.8 to 150.0	ml/g	ISO 1628
Viscosity Number	--	--	128 to 151	cm³/g	ISO 307
Mechanical	**Vydyne® R530H BK02 (Dry)**	**(Conditioned)**	**Generic Nylon 66 - Glass Fiber**	**Unit**	**Test Method**
Tensile Modulus					
--	--	--	4270 to 14200	MPa	ASTM D638
--	--	--	4720 to 11700	MPa	ISO 527-1
23°C	10000	7400	--	MPa	ISO 527-1
Tensile Strength					
Yield	--	--	81.0 to 205	MPa	ASTM D638
Yield	--	--	72.8 to 234	MPa	ISO 527-2
Break	--	--	79.2 to 221	MPa	ASTM D638
Break	--	--	69.5 to 246	MPa	ISO 527-2
Break, 23°C	195	126	--	MPa	ISO 527-2
Ultimate	--	--	116 to 200	MPa	ASTM D638
--	--	--	82.1 to 231	MPa	ASTM D638
--	--	--	52.0 to 274	MPa	ISO 527-2
Tensile Elongation					
Yield	--	--	1.9 to 3.6	%	ASTM D638
Yield	--	--	1.8 to 3.6	%	ISO 527-2
Break	--	--	1.0 to 700	%	ASTM D638
Break	--	--	2.0 to 3.6	%	ISO 527-2
Break, 23°C	3.0	5.0	--	%	ISO 527-2
Flexural Modulus					
--	--	--	3610 to 11800	MPa	ASTM D790
--	--	--	4030 to 11500	MPa	ISO 178
23°C	9600	6800	--	MPa	ISO 178

Mechanical	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
Flexural Strength					
--	--	--	112 to 307	MPa	ASTM D790
--	--	--	122 to 383	MPa	ISO 178
23°C	270	170	--	MPa	ISO 178
Yield	--	--	134 to 338	MPa	ASTM D790
Break	--	--	110 to 342	MPa	ASTM D790
Compressive Strength					
--	--	--	20.0 to 276	MPa	ASTM D695
--	--	--	43.0 to 265	MPa	ISO 604
Shear Strength	--	--	68.5 to 105	MPa	ASTM D732
Poisson's Ratio					
--	--	--	0.34 to 0.40		ASTM E132
23°C	0.40	--	--		ISO 527-2
Coefficient of Friction	--	--	0.18 to 0.59		ASTM D1894
Wear Factor	--	--	0.0 to 150	10^-8 mm³/N·m	ASTM D3702

Impact	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
Charpy Notched Impact Strength					
--	--	--	5.7 to 15	kJ/m²	ISO 179
-40°C	9.0	9.5	--	kJ/m²	ISO 179/1eA
-30°C	9.5	10	--	kJ/m²	ISO 179/1eA
23°C	11	13	--	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength					
--	--	--	29 to 100	kJ/m²	ISO 179
-40°C	65	72	--	kJ/m²	ISO 179/1eU
-30°C	65	72	--	kJ/m²	ISO 179/1eU
23°C	75	90	--	kJ/m²	ISO 179/1eU

Impact	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
Notched Izod Impact					
--	--	--	36 to 170	J/m	ASTM D256
--	--	--	2.2 to 16	kJ/m²	ISO 180
-40°C	9.5	10	--	kJ/m²	ISO 180/1A
-30°C	10	11	--	kJ/m²	ISO 180/1A
23°C	11	13	--	kJ/m²	ISO 180/1A
Notched Izod Impact (Area)	--	--	5.63 to 18.2	kJ/m²	ASTM D256
Unnotched Izod Impact					
--	--	--	340 to 1600	J/m	ASTM D4812
--	--	--	30 to 91	kJ/m²	ISO 180
Instrumented Dart Impact					
--	--	--	5.00 to 12.5	J	ASTM D3763
--	--	--	0.700 to 4.22	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force	--	--	580 to 1110	N	ISO 6603-2
Tensile Impact Strength	--	--	11.3 to 33.3	kJ/m²	ASTM D1822

Hardness	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
Rockwell Hardness					
--	--	--	114 to 125		ASTM D785
--	--	--	95 to 122		ISO 2039-2
Shore Hardness	--	--	78 to 81		ISO 868
Ball Indentation Hardness	--	--	178 to 330	MPa	ISO 2039-1

Thermal	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
Deflection Temperature Under Load					
0.45 MPa, Unannealed	--	--	249 to 261	°C	ASTM D648
0.45 MPa, Unannealed	260	--	247 to 264	°C	ISO 75-2/B
1.8 MPa, Unannealed	--	--	219 to 259	°C	ASTM D648
1.8 MPa, Unannealed	250	--	227 to 259	°C	ISO 75-2/A
1.8 MPa, Annealed	--	--	235 to 255	°C	ASTM D648
8.0 MPa, Unannealed	--	--	70.0 to 236	°C	ISO 75-2/C
Continuous Use Temperature	--	--	86.9 to 183	°C	ASTM D794
Glass Transition Temperature	--	--	5.00 to 80.0	°C	ISO 11357-2
Vicat Softening Temperature					
--	--	--	229 to 261	°C	ASTM D1525
--	--	--	225 to 255	°C	ISO 306
Melting Temperature					
--	--	--	253 to 266	°C	
--	--	--	260 to 265	°C	DSC
--	260	--	260 to 264	°C	ISO 11357-3
--	--	--	253 to 260	°C	ASTM D3418
--	--	--	259 to 261	°C	ISO 3146
CLTE					
Flow	--	--	1.7E-5 to 7.9E-5	cm/cm/°C	ASTM D696
Flow	--	--	9.1E-6 to 4.3E-5	cm/cm/°C	ASTM E831
Flow	--	--	1.2E-5 to 4.2E-5	cm/cm/°C	ISO 11359-2
Flow : 23 to 55°C, 2.00 mm	2.2E-5	--	--	cm/cm/°C	ISO 11359-2
Transverse	--	--	1.0E-6 to 9.8E-5	cm/cm/°C	ASTM D696
Transverse	--	--	3.8E-5 to 7.9E-5	cm/cm/°C	ASTM E831
Transverse	--	--	5.7E-5 to 1.2E-4	cm/cm/°C	ISO 11359-2
Transverse : 23 to 55°C, 2.00 mm	1.1E-4	--	--	cm/cm/°C	ISO 11359-2
Specific Heat	--	--	1240 to 2000	J/kg/°C	ASTM C351
Thermal Conductivity					
--	--	--	0.19 to 0.57	W/m/K	ASTM C177
--	--	--	0.20 to 0.40	W/m/K	ISO 8302

Thermal	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
RTI Elec					UL 746B
--	--	--	65.0 to 142	°C	
0.75 mm	140	--	--	°C	
1.5 mm	140	--	--	°C	
3.0 mm	140	--	--	°C	
RTI Imp					UL 746B
--	--	--	65.0 to 131	°C	
0.75 mm	120	--	--	°C	
1.5 mm	120	--	--	°C	
3.0 mm	120	--	--	°C	
RTI Str					UL 746B
--	--	--	65.0 to 142	°C	
0.75 mm	125	--	--	°C	
1.5 mm	140	--	--	°C	
3.0 mm	140	--	--	°C	

Electrical	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
Surface Resistivity					
--	--	--	10 to 2.5E+15	ohms	ASTM D257
--	--	--	20 to 2.5E+15	ohms	IEC 60093
--	--	--	1.0E+2 to 6.0E+15	ohms	IEC 62631-3-2
Volume Resistivity					
--	--	--	1.0E+2 to 2.5E+16	ohms·cm	ASTM D257
--	--	--	10 to 7.5E+15	ohms·cm	IEC 60093
1.00 mm	1.0E+13	--	--	ohms·cm	IEC 60093
--	--	--	1.0E+9 to 1.3E+15	ohms·m	IEC 62631-3-1
Dielectric Strength					
--	--	--	16 to 25	kV/mm	ASTM D149
--	--	--	18 to 48	kV/mm	IEC 60243-1
1.00 mm	31	20	--	kV/mm	IEC 60243-1

Electrical	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
Dielectric Constant					
--	--	--	2.91 to 4.09		ASTM D150
--	--	--	3.47 to 4.11		IEC 60250
--	--	--	3.69		IEC 60250
--	--	--	3.75		IEC 62631-2-1
Dissipation Factor					
--	--	--	0.010 to 0.021		ASTM D150
--	--	--	6.8E-3 to 0.021		IEC 60250
--	--	--	9.0E-3 to 0.017		IEC 62631-2-1
Arc Resistance	--	--	63.5 to 130	sec	ASTM D495
Arc Resistance (3.00 mm)	PLC 6	--	--		ASTM D495
Comparative Tracking Index (CTI)	--	--	540 to 600	V	UL 746A
Comparative Tracking Index					IEC 60112
--	--	--	400 to 600	V	
3.00 mm	250 to 399	--	--	V	
High Amp Arc Ignition (HAI)					UL 746A
0.75 mm	PLC 0	--	--		
1.5 mm	PLC 0	--	--		
3.0 mm	PLC 0	--	--		
High Voltage Arc Tracking Rate (HVTR)					UL 746A
3.00 mm	PLC 1	--	--		
Hot-wire Ignition (HWI)					UL 746A
0.75 mm	PLC 4	--	--		
1.5 mm	PLC 3	--	--		
3.0 mm	PLC 4	--	--		

Flammability	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
Burning Rate					ISO 3795
--	--	--	0.0 to 100	mm/min	
2.00 mm	0.0	--	--	mm/min	

Flammability	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit	Test Method
Flame Rating					UL 94
0.75 mm	HB	--	--		
1.5 mm	HB	--	--		
3.0 mm	HB	--	--		
Glow Wire Flammability Index					IEC 60695-2-12
--	--	--	649 to 960	°C	
0.75 mm	675	--	--	°C	
1.5 mm	675	--	--	°C	
3.0 mm	675	--	--	°C	
Glow Wire Ignition Temperature					IEC 60695-2-13
--	--	--	650 to 961	°C	
0.75 mm	700	--	--	°C	
1.5 mm	700	--	--	°C	
3.0 mm	700	--	--	°C	
Oxygen Index					
--	--	--	25 to 34	%	ASTM D2863
--	--	--	23 to 27	%	ISO 4589-2

Fill Analysis	Vydyne® R530H BK02 (Dry)	(Conditioned)	Generic Nylon 66 - Glass Fiber	Unit
Melt Density	--	--	1.12 to 1.28	g/cm³
Ejection Temperature	--	--	210	°C

Injection	Vydyne® R530H BK02 (Dry)	Generic Nylon 66 - Glass Fiber	Unit
Drying Temperature	80	78 to 82	°C
Drying Time	4.0	2.8 to 5.3	hr
Drying Time, Maximum	--	8.0	hr
Dew Point	--	-18	°C
Suggested Max Moisture	--	2.0E-3 to 0.63	%
Suggested Shot Size	--	50	%

Injection	Vydyne® R530H BK02 (Dry)	Generic Nylon 66 - Glass Fiber	Unit
Suggested Max Regrind	--	25	%
Hopper Temperature	--	70 to 75	°C
Rear Temperature	280 to 310	264 to 289	°C
Middle Temperature	280 to 310	268 to 295	°C
Front Temperature	280 to 310	269 to 300	°C
Nozzle Temperature	280 to 310	269 to 303	°C
Processing (Melt) Temp	285 to 305	267 to 297	°C
Melt Temperature (Optimum)	--	280	°C
Mold Temperature	65 to 95	70 to 103	°C
Injection Pressure	--	6.89 to 99.2	MPa
Holding Pressure	--	59.3 to 75.0	MPa
Back Pressure	--	0.147 to 1.77	MPa
Screw Speed	--	38 to 83	rpm
Cushion	--	4.66 to 9.53	mm
Vent Depth	--	0.019 to 0.057	mm

Injection Notes	
Generic Nylon 66 - Glass Fiber	This data represents typical values that have been calculated from all products classified as: Generic Nylon 66 - Glass Fiber This information is provided for comparative purposes only.

Notes

[1] 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.

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