

Technical Data

Product Description

Celanyl®
B3 HH GF30 NC 1102/2A

PA 6, standard viscosity, 30% glass fiber reinforced, heat-stabilized.
Designed for any technical application requiring long term heat ageing resistance. Suitable for electrical parts.

Generic
Nylon 6 - Glass Fiber

This data represents typical values that have been calculated from all products classified as: Generic Nylon 6 - Glass Fiber

This information is provided for comparative purposes only.

General	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber
Manufacturer / Supplier	<ul style="list-style-type: none"> Celanese Corporation 	<ul style="list-style-type: none"> Generic
Generic Symbol	<ul style="list-style-type: none"> Nylon 6 	<ul style="list-style-type: none"> Nylon 6
Material Status	<ul style="list-style-type: none"> Commercial: Active 	<ul style="list-style-type: none"> Commercial: Active
Literature ¹	<ul style="list-style-type: none"> Technical Datasheet 	--
Search for UL Yellow Card	<ul style="list-style-type: none"> Celanese Corporation Celanyl® 	--
Availability	<ul style="list-style-type: none"> Africa & Middle East Asia Pacific Europe Latin America North America 	<ul style="list-style-type: none"> Africa & Middle East Asia Pacific Europe Latin America North America
Filler / Reinforcement	<ul style="list-style-type: none"> Glass Fiber 	<ul style="list-style-type: none"> Glass Fiber
Additive	<ul style="list-style-type: none"> Heat Stabilizer 	--
Features	<ul style="list-style-type: none"> Heat Stabilized 	--
Forms	<ul style="list-style-type: none"> Granules 	--
Processing Method	<ul style="list-style-type: none"> Injection Molding 	--
Also Available In	--	<ul style="list-style-type: none"> Asia Pacific Europe Latin America North America

Physical	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	Test Method
Density / Specific Gravity				
--	--	1.22 to 1.62	g/cm ³	ASTM D792
--	1.36	1.20 to 1.59	g/cm ³	ISO 1183
--	--	1380	kg/m ³	ISO 1183 ³
--	--	1.22 to 1.44	g/cm ³	ASTM D1505
Apparent (Bulk) Density	--	0.70	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR)				
250°C/2.16 kg	--	3.0 to 21	g/10 min	ASTM D1238
230°C/2.16 kg	--	1.0 to 6.9	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	--	24 to 50	cm ³ /10min	ISO 1133
Spiral Flow	--	11.0 to 48.8	cm	



Physical	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	Test Method
Molding Shrinkage				
Flow	--	3.0E-3 to 0.63	%	ASTM D955
Across Flow	--	0.20 to 1.2	%	ASTM D955
--	--	2.0E-3 to 1.0	%	ISO 294-4
Water Absorption				
24 hr	--	0.53 to 1.6	%	ASTM D570
24 hr, 23°C	--	0.26 to 7.2	%	ISO 62
Saturation	--	1.0 to 7.7	%	ASTM D570
Saturation, 23°C	--	4.4 to 8.0	%	ISO 62
Saturation, 23°C, 2.00 mm	5.9	--	%	ISO 62
Saturation	--	6.6	%	ISO 62 ³
Equilibrium	--	0.64 to 2.5	%	ASTM D570
Equilibrium, 23°C, 50% RH	--	0.94 to 2.5	%	ISO 62
Equilibrium, 23°C, 2.00 mm, 50% RH	1.7	--	%	ISO 62
Equilibrium	--	1.7	%	ISO 62 ³
Viscosity Number				
--	--	144 to 154	cm ³ /g	ISO 307
--	--	145	cm ³ /g	ISO 307, 1157, 1628 ³
Moisture Content				
--	--	1975 to 2000	ppm	
Mechanical	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	Test Method
Tensile Modulus				
--	--	4010 to 15100	MPa	ASTM D638
--	9300	4050 to 16300	MPa	ISO 527-1
--	--	8680	MPa	ISO 527-2 ³
Tensile Strength				
Yield	--	78.5 to 221	MPa	ASTM D638
Yield	--	69.4 to 217	MPa	ISO 527-2
Break	--	68.8 to 224	MPa	ASTM D638
Break	--	62.1 to 242	MPa	ISO 527-2
Break	170	--	MPa	ISO 527-2/5
Break	--	155	MPa	ISO 527-2 ³
--	--	50.0 to 724	MPa	ASTM D638
--	--	78.4 to 224	MPa	ISO 527-2
Tensile Elongation				
Yield	--	1.5 to 4.7	%	ASTM D638
Yield	--	1.0 to 4.7	%	ISO 527-2
Break	--	1.7 to 4.8	%	ASTM D638
Break	--	0.80 to 5.0	%	ISO 527-2
Break	3.5	--	%	ISO 527-2/5
Break	--	3.0 to 3.1	%	ISO 527-2 ³
Tensile Creep Modulus (1000 hr)				
--	--	2610	MPa	ISO 899-1



Mechanical	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	Test Method
Flexural Modulus				
--	--	3450 to 11600	MPa	ASTM D790
--	7300	3940 to 15200	MPa	ISO 178
Flexural Strength				
--	--	123 to 301	MPa	ASTM D790
--	250	116 to 342	MPa	ISO 178
Yield	--	96.0 to 269	MPa	ASTM D790
Break	--	89.2 to 274	MPa	ASTM D790
Compressive Strength				
--	--	100 to 173	MPa	ASTM D695
--	--	70.0 to 280	MPa	ISO 604
Shear Strength	--	60.0 to 115	MPa	ASTM D732
Poisson's Ratio	--	0.34 to 0.35		ASTM E132
Coefficient of Friction	--	0.23 to 0.87		ASTM D1894
Taber Abrasion Resistance	--	10.0 to 30.5	mg	ASTM D1044
Wear Factor	--	33 to 150	10 ⁻⁸ mm ³ /N·m	ASTM D3702
Impact	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	Test Method
Charpy Notched Impact Strength				
--	--	2.9 to 20	kJ/m ²	ISO 179
23°C	13	--	kJ/m ²	ISO 179/1eA
-30°C	--	10.5	kJ/m ²	ISO 179/1eA ³
23°C	--	10.6	kJ/m ²	ISO 179/1eA ³
Charpy Unnotched Impact Strength				
--	--	30 to 100	kJ/m ²	ISO 179
23°C	100	--	kJ/m ²	ISO 179/1eU
-30°C	--	47.5	kJ/m ²	ISO 179/1eU ³
23°C	--	72.3	kJ/m ²	ISO 179/1eU ³
Notched Izod Impact				
--	--	33 to 180	J/m	ASTM D256
--	--	2.5 to 19	kJ/m ²	ISO 180
23°C	16	--	kJ/m ²	ISO 180/1A
Notched Izod Impact (Area)	--	3.57 to 15.2	kJ/m ²	ASTM D256
Unnotched Izod Impact				
--	--	72 to 1400	J/m	ASTM D4812
--	--	28 to 91	kJ/m ²	ISO 180
Instrumented Dart Impact				
--	--	8.80 to 25.0	J	ASTM D3763
--	--	1.30 to 9.06	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force	--	568 to 1320	N	ISO 6603-2



Hardness	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	Test Method
Rockwell Hardness				
--	--	114 to 123		ASTM D785
--	--	74 to 123		ISO 2039-2
Shore Hardness	--	75 to 87		ISO 868
Ball Indentation Hardness	--	168 to 283	MPa	ISO 2039-1
Thermal	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	--	202 to 223	°C	ASTM D648
0.45 MPa, Unannealed	210	208 to 222	°C	ISO 75-2/B
0.45 MPa	--	215	°C	ISO 75-2 ³
1.8 MPa, Unannealed	--	188 to 216	°C	ASTM D648
1.8 MPa, Unannealed	205	186 to 216	°C	ISO 75-2/A
1.8 MPa	--	205	°C	ISO 75-2 ³
8.0 MPa, Unannealed	--	54.0 to 194	°C	ISO 75-2/C
Continuous Use Temperature	--	88.6 to 184	°C	ASTM D794
Glass Transition Temperature	--	5.00 to 60.3	°C	ISO 11357-2
Vicat Softening Temperature	--	199 to 216	°C	ASTM D1525 ISO 306
Melting Temperature				
--	--	215 to 223	°C	
--	--	220 to 225	°C	DSC
--	--	219 to 223	°C	ISO 11357-3
-- ⁴	225	--	°C	ISO 11357-3
--	--	215 to 220	°C	ASTM D3418
--	--	219 to 222	°C	ISO 3146
CLTE				
Flow	--	4.9E-6 to 5.4E-5	cm/cm/°C	ASTM D696
Flow	--	1.0E-5 to 3.2E-5	cm/cm/°C	ASTM E831
Flow	--	4.0E-7 to 3.8E-5	cm/cm/°C	ISO 11359-2
Transverse	--	3.2E-5 to 1.4E-4	cm/cm/°C	ASTM D696
Transverse	--	3.6E-5 to 9.6E-5	cm/cm/°C	ASTM E831
Transverse	--	1.7E-6 to 2.5E-4	cm/cm/°C	ISO 11359-2
Specific Heat	--	1290 to 1700	J/kg/°C	ASTM C351
Thermal Conductivity				
--	--	0.28 to 15	W/m/K	ASTM C177
--	--	0.21 to 1.5	W/m/K	ISO 8302
RTI Elec	--	65.0 to 142	°C	UL 746B
RTI Imp	--	65.0 to 125	°C	UL 746B
RTI Str	--	65.0 to 142	°C	UL 746B
Electrical	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	Test Method
Surface Resistivity				
--	--	5.0E+2 to 2.5E+15	ohms	ASTM D257
--	--	12 to 1.0E+15	ohms	IEC 60093
--	--	5.0E+2 to 1.3E+14	ohms	IEC 62631-3-2



Electrical	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	Test Method
Volume Resistivity				
--	--	5.5 to 2.5E+16	ohms·cm	ASTM D257
--	--	1.0E+3 to 6.5E+15	ohms·cm	IEC 60093
--	--	1.0E+2 to 2.5E+14	ohms·m	IEC 62631-3-1
Dielectric Strength				
--	--	15 to 28	kV/mm	ASTM D149
--	--	20 to 41	kV/mm	IEC 60243-1
Dielectric Constant				
--	--	3.19 to 4.02		ASTM D150
--	--	3.47 to 3.94		IEC 60250
--	--	3.93		IEC 60250
--	--	3.63		IEC 62631-2-1
Dissipation Factor				
--	--	0.020 to 0.021		ASTM D150
--	--	4.4E-3 to 0.026		IEC 60250
--	--	5.0E-3 to 0.015		IEC 62631-2-1
1 MHz	--	0.020		IEC 60250 ³
Arc Resistance	--	70.0 to 180	sec	ASTM D495
Comparative Tracking Index (CTI)	--	495 to 600	V	UL 746A
Comparative Tracking Index				
--	--	390 to 600	V	IEC 60112
--	--	523		IEC 60112 ³
Flammability	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	Test Method
Burning Rate	--	99 to 100	mm/min	ISO 3795
Flame Rating (1.5 mm)	HB	--		UL 94
Glow Wire Flammability Index	--	642 to 960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature	--	650 to 960	°C	IEC 60695-2-13
Oxygen Index	--	22 to 32	%	ASTM D2863 ISO 4589-2
Fill Analysis	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	Test Method
Melt Density	--	1.03 to 1.38	g/cm ³	
Melt Specific Heat	--	2190	J/kg/°C	ASTM C351
Melt Thermal Conductivity	--	0.27	W/m/K	ASTM C177
Injection	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit	
Drying Temperature	--	80 to 82	°C	
Drying Time	--	2.9 to 5.3	hr	
Drying Time, Maximum	--	8.0	hr	
Dew Point	--	-30 to -18	°C	
Suggested Max Moisture	--	0.094 to 0.22	%	
Suggested Shot Size	--	50	%	
Suggested Max Re grind	--	18	%	
Hopper Temperature	--	70 to 80	°C	



Injection	Celanyl® B3 HH GF30 NC 1102/2A	Generic Nylon 6 - Glass Fiber	Unit
Rear Temperature	--	221 to 284	°C
Middle Temperature	--	229 to 283	°C
Front Temperature	--	238 to 286	°C
Nozzle Temperature	--	245 to 285	°C
Processing (Melt) Temp	--	244 to 282	°C
Melt Temperature (Optimum)	--	273	°C
Mold Temperature	--	68 to 101	°C
Injection Pressure	--	6.89 to 100	MPa
Holding Pressure	--	59.9 to 75.8	MPa
Back Pressure	--	0.150 to 1.77	MPa
Screw Speed	--	40 to 202	rpm
Cushion	--	3.95 to 9.53	mm
Vent Depth	--	0.019 to 0.020	mm

Injection Notes

Generic Nylon 6 - Glass Fiber
 This data represents typical values that have been calculated from all products classified as: Generic Nylon 6 - Glass Fiber
 This information is provided for comparative purposes only.

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 Typical properties: these are not to be construed as specifications.
- ³ Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
- ⁴ 10°C/min

