

Product Comparison

Product Description				
WPP PP PPH3GF3-Black		WPP PPH3GF3-Black includes a Long Term Heat Aging Stabilization Package.		
Generic PP Homopolymer - Glass Fiber Reinforcement		This data represents typical values that have been calculated from all products classified as: Generic PP Homopolymer - Glass Fiber Reinforcement		
		This information is provided for comparative purposes only.		
General	WPP PP PPH3GF3-Black	Generic PP Homopolymer - Glass Fiber Reinforcement		
Manufacturer / Supplier	• Washington Penn Plastic Co. Inc.	• Generic		
Generic Symbol	• PP Homopolymer	• PP Homopolymer		
Material Status	• Commercial: Active	• Commercial: Active		
Availability	• North America	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America • South America		
Filler / Reinforcement	• Glass Fiber Reinforcement, 30% Filler by Weight	• Glass Fiber Reinforcement		
Additive	• Carbon Black • UV Stabilizer	--		
Features	• Chemically Coupled • Good Heat Aging Resistance • High Stiffness • Homopolymer	--		
Appearance	• Black	--		
Forms	• Pellets	--		
Physical	WPP PP PPH3GF3-Black	Generic PP Homopolymer - Glass Fiber Reinforcement	Unit	Test Method
Specific Gravity				
--	1.13	0.953 to 1.26	g/cm ³	ASTM D792
--	--	1.04 to 1.14	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR)				
230°C/2.16 kg	7.0	1.0 to 9.9	g/10 min	ASTM D1238
230°C/2.16 kg	--	0.60 to 16	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (230°C/2.16 kg)	--	1.00 to 15.0	cm ³ /10min	ISO 1133
Molding Shrinkage				
Flow: 23°C	--	0.13 to 0.63	%	ASTM D955
Across Flow: 23°C	--	0.78 to 1.3	%	ASTM D955
23°C	--	0.18 to 1.2	%	ISO 294-4
Water Absorption				
24 hr, 23°C	--	0.010 to 0.034	%	ASTM D570
24 hr, 23°C	--	0.020 to 0.20	%	ISO 62
Equilibrium, 23°C, 50% RH	--	0.10 to 0.20	%	ISO 62
Mechanical	WPP PP PPH3GF3-Black	Generic PP Homopolymer - Glass Fiber Reinforcement	Unit	Test Method
Tensile Modulus				
23°C	--	2030 to 9100	MPa	ASTM D638
23°C	--	2640 to 7240	MPa	ISO 527-2
Tensile Strength				
Yield	75.8	--	MPa	ASTM D638
Yield, 23°C	--	39.9 to 95.6	MPa	ASTM D638
Yield, 23°C	--	34.0 to 100	MPa	ISO 527-2
Break, 23°C	--	33.0 to 101	MPa	ASTM D638
Break, 23°C	--	42.6 to 102	MPa	ISO 527-2

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Mechanical	WPP PP PPH3GF3-Black	Generic PP Homopolymer - Glass Fiber Reinforcement	Unit	Test Method
23°C	--	40.2 to 100	MPa	ASTM D638
Tensile Elongation				
Yield, 23°C	--	2.9 to 4.1	%	ASTM D638
Yield, 23°C	--	2.5 to 4.1	%	ISO 527-2
Break, 23°C	--	1.0 to 7.3	%	ASTM D638
Break, 23°C	--	1.2 to 4.1	%	ISO 527-2
Flexural Modulus				
23°C	--	2220 to 7580	MPa	ASTM D790
1% Secant	5000	--	MPa	ASTM D790
23°C	--	2860 to 7560	MPa	ISO 178
Flexural Strength				
--	117	--	MPa	ASTM D790
23°C	--	51.4 to 131	MPa	ASTM D790
23°C	--	62.5 to 153	MPa	ISO 178
Yield, 23°C	--	49.0 to 120	MPa	ASTM D790
Break, 23°C	--	82.5 to 150	MPa	ASTM D790
Compressive Strength (23°C)	--	44.8 to 82.8	MPa	ASTM D695
Impact	WPP PP PPH3GF3-Black	Generic PP Homopolymer - Glass Fiber Reinforcement	Unit	Test Method
Charpy Notched Impact Strength (23°C)	--	3.7 to 11	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength (23°C)	--	29 to 50	kJ/m ²	ISO 179
Notched Izod Impact				
23°C	80.1	41.4 to 107	J/m	ASTM D256
23°C	--	2.20 to 14.4	kJ/m ²	ISO 180
Unnotched Izod Impact				
23°C	--	170 to 711	J/m	ASTM D256
23°C	--	21.9 to 55.0	kJ/m ²	ISO 180
Gardner Impact (23°C)	--	0.300 to 0.922	J	ASTM D3029
Gardner Impact (23°C)	--	0.199 to 0.466	J	ASTM D5420
Hardness	WPP PP PPH3GF3-Black	Generic PP Homopolymer - Glass Fiber Reinforcement	Unit	Test Method
Rockwell Hardness (23°C)	--	84 to 115		ASTM D785
Durometer Hardness				
23°C	--	72 to 95		ASTM D2240
23°C	--	73 to 85		ISO 868
Ball Indentation Hardness	--	73.0 to 116	MPa	ISO 2039-1
Thermal	WPP PP PPH3GF3-Black	Generic PP Homopolymer - Glass Fiber Reinforcement	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	157	147 to 161	°C	ASTM D648
0.45 MPa, Unannealed	--	149 to 161	°C	ISO 75-2/B
0.45 MPa, Annealed	--	151 to 162	°C	ASTM D648
1.8 MPa, Unannealed	135	128 to 157	°C	ASTM D648
1.8 MPa, Unannealed	--	124 to 160	°C	ISO 75-2/A
Vicat Softening Temperature				
--	--	110 to 165	°C	ASTM D1525
--	--	115 to 164	°C	ISO 306
Ball Pressure Test	--	Pass		IEC 60695-10-2
Melting Temperature				
--	--	175 to 185	°C	
--	--	160 to 165	°C	ISO 3146
CLTE - Flow (20 to 26°C)	--	0.000030 to 0.000056	cm/cm/°C	ASTM D696
Thermal Conductivity (23°C)	--	0.19 to 0.37	W/m/K	ASTM C177

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Electrical	WPP PP PPH3GF3-Black	Generic PP Homopolymer - Glass Fiber Reinforcement	Unit	Test Method
Surface Resistivity	--	9.8E+13 to 1.0E+14	ohms	IEC 60093
Volume Resistivity				
23°C	--	7.5E+14 to 1.0E+16	ohm·cm	ASTM D257
--	--	1.0E+14 to 2.6E+15	ohm·cm	IEC 60093
Dielectric Strength				
23°C	--	20 to 25	kV/mm	ASTM D149
23°C	--	59 to 61	kV/mm	IEC 60243-1
Dielectric Constant (23°C)	--	2.69 to 3.01		ASTM D150
Dissipation Factor				
23°C	--	0.0010 to 0.0020		ASTM D150
23°C	--	0.0 to 0.000025		IEC 60250
Arc Resistance	--	120 to 125	sec	ASTM D495
Comparative Tracking Index	--	599 to 600	V	IEC 60112
Flammability	WPP PP PPH3GF3-Black	Generic PP Homopolymer - Glass Fiber Reinforcement	Unit	Test Method
Glow Wire Flammability Index	--	650 to 960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature	--	642 to 776	°C	IEC 60695-2-13
Oxygen Index	--	20 to 21	%	ASTM D2863
UL 746	WPP PP PPH3GF3-Black	Generic PP Homopolymer - Glass Fiber Reinforcement	Unit	Test Method
RTI Str	--	92.5	°C	UL 746
RTI Imp	--	65.0 to 120	°C	UL 746
RTI Elec	--	92.5	°C	UL 746
Injection	WPP PP PPH3GF3-Black	Generic PP Homopolymer - Glass Fiber Reinforcement	Unit	
Drying Temperature	--	75.8 to 82.9	°C	
Drying Time	--	2.0 to 3.0	hr	
Suggested Max Moisture	--	0.070 to 0.20	%	
Suggested Max Regrind	--	20	%	
Rear Temperature	--	228 to 247	°C	
Middle Temperature	--	235 to 247	°C	
Front Temperature	--	245 to 247	°C	
Nozzle Temperature	--	245 to 246	°C	
Processing (Melt) Temp	--	228 to 235	°C	
Mold Temperature	--	48.0 to 60.0	°C	
Injection Pressure	--	85.9 to 106	MPa	
Holding Pressure	--	2.59 to 86.2	MPa	
Back Pressure	--	0.241 to 0.360	MPa	
Screw Speed	--	45 to 75	rpm	
Clamp Tonnage	--	3.4 to 4.5	kN/cm ²	
Cushion	--	8.81 to 8.93	mm	
Injection Notes				
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Notes

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