

PP

Polypropylene

Overview

The SAF PP is the first real polypropylene additive manufacturing solution in PBF: Superior aesthetics, best accuracy, fastest, most cost-effective, for chemically resistant and airtight applications.





	Mean	Unit	Standard
Tensile Strength (XZ,YX)	26 (3740)	MPa (psi)	ASTM D638-14
Tensile Strength (ZX)	26 (3740)	MPa (psi)	ASTM D638-14
Elongation at Break (XZ,YX)	22	%	ASTM D638-14
Elongation at Break (ZX)	11	%	ASTM D638-14
0.2% Offset Yield Strength (XZ,YX)	12.5 (1810)	MPa (psi)	ASTM D638-14
0.2% Offset Yield Strength (ZX)	12.7 (1840)	MPa (psi)	ASTM D638-14
Tensile Modulus (XZ,YX)	1260 (183)	MPa (ksi)	ASTM D638-14
Tensile Modulus (ZX)	1212 (176)	MPa (ksi)	ASTM D638-14
Flexural Strength (XZ)	28 (4050)	MPa (psi)	ASTM D790-17
Flexural Strength (YX)	25 (3570)	MPa (psi)	ASTM D790-17
Flexural Strength (ZX)	30 (4290)	MPa (psi)	ASTM D790-17
Flexural Modulus (XZ)	992 (144)	MPa (ksi)	ASTM D790-17
Flexural Modulus (YX)	870 (126)	MPa (ksi)	ASTM D790-17
Flexural Modulus (ZX)	1119 (162)	MPa (ksi)	ASTM D790-17
Notched Impact Strength (XZ,YX)	3.5 (1.67)	kJ/m2 (Ft.lbf/in2)	ASTM D256-10
Notched Impact Strength (ZX)	2.5 (1.19)	kJ/m2 (Ft.lbf/in2)	ASTM D256-10
General	Mean	Unit	Standard
Part Specific Gravity	0.89	-	ASTM D792-13
Virgin Particle Size D50	60-70 (2.36-2.76)	µm (thou)	
Virgin Powder Melting Point	140 (284)	°C (°F)	



Thermal	Mean	Unit	Standard
Heat Deflection Temperature (0.46MPa/65psi)	107 (225)	°C (°F)	ASTM D648-18
Heat Deflection Temperature (1.82MPa/264psi)	56 (132)	°C (°F)	ASTM D648-18
Coefficient of Thermal Expansion	169 (94)	µm/°C.m (thou/in.°F)	ASTM E831-19
Specific Heat Capacity (20°C/68°F)	1.76 (0.4)	J/g.°C (BTU/lb.°F)	ASTM E1269-11
Thermal Conductivity (23°C/73°F)	0.196 (1.36)	W/m K (BTU (th) inch/hr.ft.°F)	ASTM C518

Electrical	Mean	Unit	Standard
Surface Resistivity	5.24 x10 ¹⁵	Ohm/square	ASTM D257-14
Volume Resistivity	7.39 x10 ¹⁵	Ohm-cm	ASTM D257-14

Bio compatibility	Result	Unit	Standard
Determination of Skin Irritation	Non-irritant	N/A	ISO 10993-10 2014-10 / OECD 439 2015-07
Determination of Cytotoxicity	Material shows no cytotoxic effect	N/A	DIN EN ISO 10993-5, 2009, Annex D

Flammability		Unit	Standard
UL94 HB (3.24mm at 23+-2°C/50+-10% RH) ⁹	Pass	Not Applicable	UL94 (April 2022)

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MATERIAL DATA SHEET

SAF PP

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