



VIRGIN PTFE

MATERIAL SPECIFICATION SHEET

Fluorocarbon Company Material Reference – **FL 100**

Description: VIRGIN PTFE TO BS EN ISO 13000

Formulation: 100% PTFE

Colour: White

PTFE has a wide range of applications that make use of its extreme chemical resistance, very low coefficient of friction, excellent electrical insulation properties and thermal stability up to 250°C.

For Potable Water Applications:

PTFE is an ideal material for use with drinking water because of its inertness. Providing that the requirement is stated on the order we can certify that items have been produced from polymer which has been positively evaluated by the Water Research Council against the Water Regulations Advisory Scheme with the tests being carried out in accordance with BS6920 "Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water".

For Food Contact:

On request this material can be produced from polymer which satisfies the compositional requirements of US FDA Regulation 21 CFR 177.1550.

Typical Physical Properties:

Rod, tube and sheet semi-finished material in virgin PTFE can be produced to satisfy BS EN ISO 13000-1. Ram extruded material will normally satisfy Grade 3 and often Grade 2. Compression moulded material will normally satisfy Grade 1. Material can be certified as satisfying these grades for a small extra cost (if required).



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Properties	Unit	Grade 1	Grade 2	Grade 3	Grade 4
Density	g / cm ³	All Grades 2.13 – 2.19			
Tensile Strength	MPa	>25	>20	>15	>10
Elongation	%	>280	>200	>150	>75

Properties determined in accordance with BS EN ISO 13000-2

UV STABILITY		Unaffected by UV Light
WATER ABSORPTION (DIN 53472/8.2)		Zero
OPERATING TEMPERATURE RANGE		-260 to 260°C
SHORE D HARDNESS		55-65
MODULUS OF ELASTICITY (ASTM D698)		600 MPa
COMPRESSIVE STRENGTH (DIN 53454)	1% yield stress	10 MPa
	10% yield stress	18 MPa
VOLUME RESISTIVITY (DIN 53482)		10 ¹⁸ Ω.cm
SURFACE RESISTIVITY (ASTM D257)	Dry	>10 ¹⁶ Ω
	50% RH.	3.5 X 10 ¹³ Ω
	100% RH	3.6 X 10 ¹² Ω
DIELECTRIC STRENGTH (ASTM D149)	0.2 mm film	60 kV/mm
DIELECTRIC CONSTANT (ASTM D150)	60 Hz	2.1
	10 ⁶ Hz	2.1
	10 ⁹ Hz	2.1
DISSIPATION FACTOR (ASTM D150)	60 Hz	<1 X 10 ⁻⁴
	10 ⁶ Hz	<1 X 10 ⁻⁴
	10 ⁹ Hz	4 x 10 ⁻⁴
ARC RESISTANCE	VDE 0303/ Part 5	Class L4
	ASTM D495-61	300s
THERMAL CONDUCTIVITY (ASTM C177)	at 35°C	0.24 W/m·K
WEAR RATE (m ³ /Nm x 10 ⁻¹⁶)		3500

These figures are typical values for the material and do not represent a product specification. Properties will vary depending on the source of raw material, method of processing, physical form of the product, direction of measurement etc.

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