

PTFE (POLYTETRAFLUOROETHYLENE) VIRGIN DATA SHEET

The basic properties of PTFE are due to the chemical structure of the polymer, which is composed of a double carbon and fluorine bond. The size of the fluorine atoms allows the formation of a uniform and continuous sheath around the carbon-carbon bonds and protects them from external attack, thereby providing the molecule with chemical resistance and stability.

The basic properties of PTFE deliver quantifiable and valued benefits, which originate from the chemical structure of the fluoropolymer.

Basic properties:

- High melting point
- High thermal stability
- Retains its basic mechanical properties allowing it to be used over a wide range temperature (-200°C to +260°C)
- Insolubility
- Low dynamic coefficient of friction
- Low dielectric constant/dissipation factor
- Low absorption coefficient
- Excellent weatherability, chemical resistance and insulating properties.

PROPERTIES	Test methods	Units	VALUES
Colour	-	-	white
Density	ASTM D792	g/cm ³	2.130-2.190
Water absorption after 24h immersion in water of 23°C	ASTM D570	%	0.01
Wear factor K	ASTM D3702	-	2900
Wear coefficient	-	Cm ³ min 10 ⁻⁸ Kg m h	20000 - 25000
Thermal Properties			
Thermal conductivity	ASTM C177	W/mK	0.34
Max. allowable service temperature in air for short periods	-	°C	280
Max. allowable service temperature in air continuously for min. 20 h	-	°C	260
Min.service temperature	-	°C	-200
Flammability "Oxygen Index"	UL 94		V-0
Mechanical Properties at 23°C			
Tensile strength	ASTM D4894	MPa	≥ 25
Elongation	ASTM D4894	%	≥ 280
Hardness	ASTM D2240	Shore D	≥54
Coefficient of static friction	ASTM D1894		0.08 – 0.10
Coefficient of dynamic friction	ASTM D1894		0.06 – 0.08
Compression strength at 1 % deformation	ASTM D695	MPa	≥4
Deformation under load (140 Kg/cm ² for 24 hrs. at 23°C)	ASTM D621	%	10 - 13
Permanent deformation (after 24 hrs. Relaxation at 23° C)	ASTM D621	%	6 – 7.5
Electrical Properties at 23 °C			
Dielectric strength	ASTM D149	kV/mm	20 - 70
Dielectric constant at 60 Hz to 2GHz	ASTM D150	-	2.1
Volume resistivity	ASTM D257	Ohm cm	10 ¹⁸

The information contained in this technical data sheet cannot be construed as a promise or guarantee of specific properties of our products. Any determination of the suitability of a particular material and part design for any use contemplated by the user is the sole responsibility of the user. The information contained in this technical data sheet is based on present knowledge and may be subject to change without further notice.