

MATERIAL SPECIFICATION
(TYPICAL PROPERTIES)

PRODUCT: Virg. PTFE (polytetrafluoroethylene)

<u>Property</u>	<u>Method</u>	<u>Units</u>	<u>Specification</u>
Specific gravity	ISO 13000 - 1	-	2,130 – 2,180
Tensile strenght	ISO 13000 - 1	MPa	25 - 35
Elongation	ISO 13000 - 1	%	250 - 350
Hardness	ISO 13000 - 1	Shore D	54 – 60
Flexural modulus	23° C	N/mm ²	600 – 700
Deformation under load (140 Kg/cm ^q for 24 hrs. At 23° C)	ASTM D695	%	10 – 13
Permanent deformation (after 24 hrs. Relaxation at 23° C)	ASTM D695	%	6 – 7,5
Thermal conductivity	ASTM C 177	W/m.K	0,24
Friction Coefficient	ASTM D1894	/	Static 0,09
Friction Coefficient	ASTM D1894	/	Dynamic 0,07
Dielectric constant (ε) at 60 Hz to 2GHz	ASTM D150	/	2,1
Dielectric Strength	ASTM D149	KV/mm	20 – 70 18
Volume Resistivity	ASTM D257	Ohm cm	10

Service Temperature

C° -200 / +260

Excellent resistance to continuous service temperatures up to 260° C and, for limited periods, even to higher temperatures (260 – 360° C); the low temperature resistance of the product allows satisfactory performance at as low –200° C.

<u>Property</u>	<u>Method</u>	<u>Units</u>	<u>Specification</u>
Flamability	UL 94	%	VE-0
Melting Point		C°	325 – 335
Water absorption	ASTM D570	%	0,01

Chemical resistance

PTFE possesses a high inertness towards nearly all known chemicals. It is only attacked by elemental alkali metals, chlorine trifluoride and elemental fluorine at high temperature and pressures.

Radiations resistance (gamma rays)

Low: electrical properties unchanged; mechanical properties decreased.

Solvents resistance

PTFE is insoluble in all solvents up to temperatures as high as 300° C (572° F). Certain highly fluorinated oils only swell and dissolve PTFE at temperatures close to the crystalline melting point.

Ageing and weatherability

Stable over 20 years of exposure

FDA Approved, USA regulations

(Food and Drug Administration, Department of Health and Human Services, Code of Federal Regulations 21 CFR Ch. 1; USA regulations sections 175.105 - 175.300 - 176.170 - 176.180 - 177.1520 - 177.1550 (a) (1) and (b)-Perfluorocarbon Resins - 177.2600 - 178.3570.

(Code of Federal regulation 21 CFR Ch.1, revised as of April 1, 1999 Edition);

sections 175.105 - 175.300 - 176.170 - 176.180 - 177.1520 - 177.1550 -

177.2600 - 178.3570. "Perfluorocarbon Resins" of the Food and Drug Administration/USA

Material Conformity standard:

ASTM International

DIN, DIN Deutsches Institut für Normung e. V.

AMS, Aerospace Material Specification SAE International

BS, British Standards Institution