KOLOFOL
Industry solutions

TECHNICAL DATASHEET

PTFE / VIRGIN

Virgin PTFE sheet

Physical and technical properties

ABOUT THIS DATASHEET

PTFE properties depend on resin grade, particle size and shape, fillers, and manufacturing method (compression moulding, ram extrusion, isostatic pressing or paste extrusion). The following test data refer to virgin PTFE without fillers.

Density	Hardness	Operating temperature	Elongation at break
2,1–2,2	**58–62**	**+260 °C**	**250–400**
g/cm³	Shore D	continuous	%

Mechanical properties

VALUES FROM SOURCE DATASHEET

Property	Unit	Test method	Value
Density	g/cm³	ASTM D-792	2,1–2,2
Tensile strength[1]	kgf/cm	ASTM D-638	210–375
Elongation at break	%	ASTM D-638	250–400
Compressive strength[1]	kgf/cm	ASTM D-695	40–50
Deformation under load (max.)	%	ASTM D-621	14,5
2 h; 23 °C; 113 kgf	%	ASTM D-621	12
24 h; 23 °C; 113 kgf	%	ASTM D-621	15
Permanent deformation	%	ASTM D-621	8
150 °C; 113 kgf[2]	%	ASTM D-621	55
Impact strength	J/cm	ASTM D-256	1,4–1,5
Hardness	Shore D	ASTM D-2240	58–62

Friction, wear and water absorption

Property	Unit	Test method	Value
Dynamic friction coefficient[4]	–	ASTM D-1894	0,04–0,06
Static friction coefficient[4]	–	ASTM D-1894	0,05–0,08
Wear rate (max.)	g/s	ASTM G-137	0,01
Water absorption (max.)	%	ASTM D-570	0

Additional technical properties

Thermal properties, dimensional stability, chemical resistance and sheet tolerances

Thermal and electrical properties

Property	Unit	Test method	Value
Continuous operating temperature	°C	ASTM D-648	+260
Heat resistance (max.)[3]	%	ASTM D-648	0,01
Linear thermal expansion coefficient ("10 X")[3]	%	ASTM D-696	250–275
Linear expansion, 30–150 °C (A / R)	%	ASTM D-696	1,5 / 1,5
Linear expansion, 30–200 °C (A / R)	%	ASTM D-696	2,4 / 2,3
Linear expansion, 30–250 °C (A / R)	%	ASTM D-696	3,4 / 3,6
Dielectric strength	kV/mm	ASTM D-149	22–24

Dimensional stability and chemical properties

Property	Unit	Test method	Value
Dimensional stability – length	%	ASTM D-1710	1,5–3
Dimensional stability – diameter	%	ASTM D-1710	0,5–1
Chemical resistance (max., as labelled in source)	–	ASTM D-543	0,01
Permeability	%	ASTM D-543	n. a.
Leaching / dissolution	%	ASTM D-543	0,01

PTFE SHEET THICKNESS TOLERANCES

Moulded sheet: ±8%

Skived sheet: ±3%

CHEMICAL RESISTANCE

PTFE offers excellent chemical resistance. The source notes exceptions involving molten or dissolved alkali metals, fluorine gas and some fluorides, especially at elevated temperature. Filled PTFE may show different chemical resistance depending on the filler.

INTERPRETATION NOTES

[1] The source gives "kgf/cm" as the unit for tensile and compressive strength. [2] No duration is specified for deformation at 150 °C. [3] The source labels/units for these thermal data are unclear and require verification. [4] Dynamic: P = 7 kg/cm, V = 0.5; static: P = 35 kg/cm. Larger positive tolerances may apply. All figures are indicative.