



index

[previous view](#)**F1-23**

data sheet

PTFE**F1**

20% GLASS + 5% GRAPHITE (75% VIRGIN PTFE + 20% GLASS FIBRES + 5% GRAPHITE)

COLOR MATERIAL

PTFE Glass Graphite Compound preferred for parts and components requiring very good mechanical properties.

This material offers an excellent combination of properties typical of the PTFE fluoropolymer resins:

- **Service Temperature:** offers excellent resistance to continuous service temperatures – working conditions from -100° C (-148°F) up to 250°C (482°F) and, for limited periods, even to higher temperatures; product's low temperature resistance allows satisfactory performance down to -200°C (-328° F).
- **Chemical resistance:** offers high inertness towards nearly all known chemicals. Only attacked elemental alkali metals, chlorine trifluoride and elemental fluorine at high temperature and pressures might affect properties. Glass fibres is chemically inert with the exception of its reactivity with hydrofluoric acid and strong bases.
- **Solvents resistance:** offers insoluble properties 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.
- **Secondary Filler:** contains, in addition to glass fiber, a small amount of graphite which further increases the wear resistance and decreases the friction of PTFE.
- PTFE Glass Graphite Compound enhances some characteristics of virgin PTFE such as wear, compression strength, deformation under load, cold creep, thermal conductivity and dimensional stability.

Properties

- Improved thermal dimensional stability
- Excellent chemical stability
- Improved creep resistance
- Excellent electrical insulating properties
- Improved compression strength
- Reduced friction & wear; Low friction behaviour
- Exceptional temperature resistance
- Improved surface hardness

Main applications

PTFE Glass Graphite Compound offers excellent properties in the chemical processing, in automotive industries, in sealing application and in mechanical applications in general for bushing, sliding pads, and for slide ways for machine tools.

High wear and abrasion resistance and good wear compression properties are suitable for the majority of dry bearing applications against hard counter-surfaces.

PTFE Glass Graphite Compound is commonly used filler for dynamic seal applications where both rotating and alternating movements are involved, pneumatic, hydraulic and mechanical parts, valve seats, gaskets, pneumatic, compressors, appliances, insulators hydraulic and mechanical parts.

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Property		Method	Units	Specification
Physical	Color	-	-	Black
	Specific gravity	ASTM D792	g/cm ³	2,22 – 2,28
	Water absorption	ASTM D570	%	0,05
	Flamability	UL 94		V-0
Mechanical	Tensile strength	ASTM D4745	MPa	≥ 16
	Elongation	ASTM D4745	%	≥ 180
	Hardness	ASTM D2240	Shore D	≥ 58
	Ball Hardness	ASTM D785	MPa	≥ 25
	Deformation under load (140 Kg/cm ² for 24 hrs. At 23° C)	ASTM D621	%	10,5 – 12,5
	Permanent deformation (after 24 hrs. Relaxation at 23° C)	ASTM D621	%	5 – 6,5
	Coefficient of static friction	ASTM D1894		0,12 – 0,25
	Coefficient of dynamic friction	ASTM D1894		0,10 – 0,12
Thermal	Wear coefficient	-	$\frac{\text{cm}^3 \cdot \text{min}}{\text{Kg} \cdot \text{m} \cdot \text{h}} \cdot 10^{-8}$	20-25
	Thermal conductivity	ASTM C177	W/ m*K	0,34
Electrical	Coefficient of linear thermal expansion From 25 to 100 °C	ASTM D696	10 ⁻⁵ / °C	9 - 12
	Volume resistivity	ASTM D257	Ohm*cm	10 ¹⁰
	Surface resistivity	ASTM D257	Ohm	10 ⁹