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data sheet

PTFE**F1****60% BRONZE (40% VIRGIN PTFE + 60% BRONZE)**

COLOR

MATERIAL

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

This material offers an excellent combination of properties typical of 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. Bronze filled PTFE has limited chemical resistance in some acids and alkalis.
- 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. Oxidation of the bronze can result in a discolouration of the finished part without affecting on the quality of the product.

Properties

Improved thermal dimensional stability

High thermal conductivity

Improved deformation under load

Good chemical stability

Reduced cold flow

Reduced friction & wear; Low friction behaviour

Improved compression strength

Exceptional temperature resistance

Improved surface hardness

High resistance to abrasion

Main applications

PTFE Bronze Compound offers excellent properties in the chemical processing, in automotive industries, in sealing application and in mechanical applications in general for bushing, sliding pads, for slide ways for machine tools, piston rings, compressors, pumps, hydraulics presses. High wear, abrasion resistance and good wear compression properties are suitable for the majority of dry bearing applications against hard counter-surfaces.

Bronze Compound is commonly used filler for dynamic seal applications requiring high wear resistance under strong compression but where high chemical resistance is not required. Large quantities of bronze reduce deformation under load and raise the thermal and electrical conductivity of PTFE compound. These two characteristics are beneficial to applications where a part is subjected to load at extreme temperatures.

PTFE Bronze Compound can be easily machined. It's useful in applications which undergo high mechanical loads or high-speed rubbing contacts where the bronze filler supplies the strength and conductivity to carry away excess, unwanted heat.

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60% BRONZO (40% VIRGIN PTFE + 60% BRONZE)



Property		Method	Units	Specification
Physical	Color	-	-	Brown
	Specific gravity	ASTM D792	g/cm ³	3,80 – 4,00
	Water absorption	ASTM D570	%	0,03
	Flamability	UL 94		V-0
Mechanical	Tensile strength	ASTM D4745	MPa	≥ 17
	Elongation	ASTM D4745	%	≥ 150
	Hardness	ASTM D2240	Shore D	≥ 65
	Ball Hardness	ASTM D785	MPa	≥ 30
	Deformation under load (140 Kg/cm ² for 24 hrs. At 23° C)	ASTM D621	%	5,5 - 6,5
	Permanent deformation (after 24 hrs. Relaxation at 23° C)	ASTM D621	%	2,5 - 3,5
	Coefficient of static friction	ASTM D1894		0,18 – 0,20
	Coefficient of dynamic friction	ASTM D1894		0,16– 0,18
Thermal	Wear coefficient	-	$\frac{\text{cm}^3 \cdot \text{min}}{\text{Kg} \cdot \text{m} \cdot \text{h}} \cdot 10^{-8}$	10 - 15
	Thermal conductivity	ASTM C177	W/ m*K	0,65
Electrical	Coefficient of linear thermal expansion From 25 to 100 °C	ASTM D696	10 ⁻⁵ / °C	8,5 -10
	Volume resistivity	ASTM D257	Ohm*cm	10 ⁷
	Surface resistivity	ASTM D257	Ohm	10 ⁶