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data sheet

PTFE**F1**

50% INOX (50% VIRGIN PTFE + 50% STAINLESS STEEL AISI 316 L)

COLOR

MATERIAL

PTFE Inox 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.
- 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.

Properties

- Improved thermal dimensional stability
- High thermal conductivity
- Improved deformation under load
- Very good chemical stability
- Improved surface hardness
- Reduced friction & wear; Low friction behaviour
- Improved compression strength
- Exceptional temperature resistance
- Low permeability
- Suitable for food contact

Main applications

Inox 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. It's widely used in Packaging industries for his ability to be used in contact with food.

Inox Compound is commonly used filler for dynamic applications where high compression and chemical resistance are required. Large quantities of Inox 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.

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

Statement on suitability for contact with foodstuff

FDA Approved US Regulation

- Code of Federal regulation 21 CFR Ch.1; section 177.1550 Perfluorocarbon Resins of the Food and Drug Administration/US.

EU Regulation

- EU 1935/2004 - 10/2011 on plastic materials and articles to come in contact with food.

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COLOR MATERIAL

Property		Method	Units	Specification
Physical	Color	-	-	Black
	Specific gravity	ASTM D792	g/cm ³	2,030 – 2,090
	Water absorption	ASTM D570	%	0,03
	Flamability	UL 94		V-0
Mechanical	Tensile strength	ASTM D4745	MPa	≥ 15
	Elongation	ASTM D4745	%	≥ 40
	Hardness	ASTM D2240	Shore D	≥ 63
	Ball Hardness	ASTM D785	MPa	≥ 29
	Deformation under load (140 Kg/cm ² for 24 hrs. At 23° C)	ASTM D621	%	4,5 - 5,5
	Permanent deformation (after 24 hrs. Relaxation at 23° C)	ASTM D621	%	2 - 3
	Coefficient of static friction	ASTM D1894		0,14 – 0,16
	Coefficient of dynamic friction	ASTM D1894		0,12 – 0,14
	Wear coefficient	-	$\frac{\text{cm}^3 \cdot \text{min}}{\text{Kg} \cdot \text{m} \cdot \text{h}} \cdot 10^{-8}$	150
Thermal	Thermal conductivity	ASTM C177	W/ m*K	0,65
	Coefficient of linear thermal expansion From 25 to 100 °C	ASTM D696	10 ⁻⁵ / °C	6 - 9,5
Electrical	Volume resistivity	ASTM D257	Ohm*cm	10 ⁴
	Surface resistivity	ASTM D257	Ohm	10 ³