TECHNICAL DATA SHEET

fluteck® P 505

PTFE Special Compound

Product Description.

fluorseals™ fluteck™P 505 PTFE Special Compound is a filled compound based on Virgin PTFE containing Mica for Compression and Isostatic moulding.

Product Properties:

- Improved thermal dimensional stability
- Improved deformation under load resistance
- Improved compression strength
- Exceptional temperature resistance
- Excellent chemical stability
- Excellent wear resistance
- Excellent electrical insulating properties
- Low friction behaviour
- Improved surface hardness
- Very low linear thermal expansion

	Property	Method	Units	Specification
Physical	Color	-	-	Ivory
	Specific gravity	ASTM D792	g/cm ^{3}	2,270 - 2,330
	Water absorption	ASTM D570	%	0,1
Mechanical	Tensile strength at break	ISO 527-1	MPa	13 - 15
	Elongation at break	ISO 527-1	%	6 - 12
	Tensile Modulus	ISO 527-1	GPa	≥ 1
	Ball Hardness	ISO 2039-1 N358	N/mm^2	75-90
	Shore Hardness	ASTM D2240	Shore D	72-78
	Deformation under load (140 Kg/cm^2 for 24 hrs. At 23° C)	ASTM D621	%	< 5
	Compression strength, at 1% deformation	ISO 604	MPa	10 - 11
Thermal	Melting point	DSC	°C	327
	Thermal conductivity, at 23°C	DSC	W/m.K	0,75 – 0,78
	Coefficient of linear thermal expansion From 25 to 100 °C	ASTM D696	10^{-5}/ °C	5 - 5,5
	Maxiumum service temperature, Air	Internal Test	°C	+260°C
	Oxygen Index	ISO 4589	%	≥95
	Flammability	UL94	-	V-0
Electrical	Volume resistivity	IEC60093	Ohm·cm	>10^{13}
	Dielectric strength	IEC 60243	kV/mm	>10

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Typical properties.

fluteck™P 505 is a PTFE Special Compound preferred for parts and components requiring good mechanical and tribological properties.
fluteck™P 505 offers an excellent combination of properties typical of the PTFE fluoropolymer resins:

- Service Temperature: fluteck™P 505 offers excellent resistance to continuous service temperatures-working conditions from -100°C (-148°F) up to 260°C (500°F) and, for limited periods, even to higher temperatures; product's low temperature resistance allows satisfactory performance down to -20°C (-4°F).
- Chemical resistance: fluteck™P 505 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: fluteck™P 505 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.

Typical Application.

fluteck™P 505 PTFE Special Compound enhances some key features of virgin PTFE such as a greater resistance to deformation under load and a significantly lower coefficient of linear thermal expansion. It is quite harder than unfilled PTFE, with better wear characteristics and low frictional properties. For these reasons fluteck™P 505 is ideal for sealing applications where tight dimensional control is required.
Typical applications include labyrinth seals and shrouds, dishwasher arm bearings, valve seats and adaptable seals in turbo machinery where reliable performance in hostile chemical environments is needed. fluteck™ P 505 also provides improved performance and service life when used for transmission and power-steering seal rings.

Storage and Handling.

fluteck™P 505 PTFE Special Compound can be stored for a long period of life and is exceptionally resistant to aging and weather conditions up to 10 years. Specific aging tests carried out on sample exposed to aging and atmospheric conditions, showed no changes in weight and volume.
In case of semi-finished products, before processing or before the machining, it is advisable to store the material for 24 hours in the production area, preferable in a clean and dry place at a temperature of less than 25°C (77°F), preferably between 21-25°C (70-77°F).This is very important when room temperature is low; in such cases the material should be conditioned up to 72 hours in the production area in the recommended temperature range.

Safety instruction.

Follow the normal precautions observed with all fluoropolymers.
Please consult the Material Safety Data Sheet and Product Label for information regarding the safe handling of the material. By following all precautions and safety measures, processing, machining, and using these products poses no known health risks. General handling and processing precautions include: 1) Process only in well-ventilated areas. 2) Do not smoke in working areas. 3) Avoid eye contact. 4) Avoid mouth contact. 5) If skin comes into contact with these products during handling, wash with soap and water afterwards. 6) Avoid contact with hot fluoropolymers.

The user must verify that the finished parts, made out of the semi-finished product, are technically suitable for the requested application. The user must also verify that the finished item may not cause any modification to the organoleptic properties of the foodstuff and that the item's technological fitness it is assigned to may be guaranteed.
For each foreign country market, where the articles are introduced into, it is user's responsibility to verify whether both material than articles comply with the applicable laws and regulations.

Delivery format.

fluteck™P 505 PTFE Special Compound is supplied in the following shapes and formats:
Semi-finished products: rods. Shapes and sizes as per fluorseals General Size List and/as per customer request.
Machined parts: Shapes and sizes as per customer request.

Note: The information contained in this technical data sheet have been collected and ranked on technical data coming from reliable statistic series gathered in the field over the years. All information are intended only as general guidelines for use at user discretion. Fluorseals do not guarantee any specific result and do not assume any liability in connection with the use of the products in the described application. None of the information included in this document is to be taken as a licence to operate under, or recommendations to infringe any existing patents. Before the use, the product has to be sampled and tested in the specific application and in the field of use at working condition in order to be approved by the us.

Rev: 03/2015

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