TECHNICAL DATA SHEET

fluteck® P9800 CS

PTFE Carbon Conductive Compound

Product Description.

fluorseals™ fluteck™P9800 CS PTFE Carbon Conductive Compound is a filled compound based on Virgin PTFE containing maximum 2% Special Carbon Conductive filler for Ram Extrusion, Compression and Isostatic moulding.

Product Properties:

- Very good mechanical properties
- Exceptional temperature resistance
- High limiting oxygen index
- UV resistance
- Extremely non-adhesive
- Excellent chemical resistance.
- Reduced friction & wear; Low friction behaviour
- Very good electrical conductivity
- High degree of hydrophobicity
- Antistatic

Property		Method	Units	Specification
Physical	Color	-	-	Black
	Specific gravity	ASTM D792	g/cm ^{3}	2,130 – 2,190
	Water absorption	ASTM D570	%	0,01
	Flamability	UL 94		V-0
Mechanical	Tensile strength	ASTM D4894	MPa	≥ 22
	Elongation	ASTM D4894	%	≥ 250
	Hardness	ASTM D2240	Shore D	≥ 54
	Ball Hardness	ASTM D785	MPa	≥ 23
	Compression strength at 1% deformation	ASTM D695	MPa	≥ 4
	Deformation under load (140 Kg/cm2 for 24 hrs. At 23° C)	ASTM D621	%	10 – 13
	Permanent deformation (after 24 hrs. Relaxation at 23° C)	ASTM D621	%	6 – 7,5
	Coefficient of static friction	ASTM D1894		0,08 – 0,10
	Coefficient of dynamic friction	ASTM D1894		0,06 – 0,08
	Wear factor K	ASTM D3702		2.900
	Wear coefficient		cm3 min 10-8 Kg m h	20000 - 25000
Thermal	Thermal conductivity	ASTM C177	W/ m·K	0,34
	Coefficient of linear thermal expansion From 25 to 100 °C	ASTM D696	10^{-5}/ °C	15 - 16
Electrical	Volume resistivity	ASTM D257	Ohm·cm	10 ^{4}
	Surface resistivity	ASTM D257	Ohm	10 ^{3}

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Typical properties.

fluteck™P9800 CS is a PTFE Carbon Conductive Compound preferred for parts and components requiring very good mechanical properties.
fluteck™P9800 CS offers an excellent combination of properties typical of the fluoropolymer resins:

- Service Temperature: fluteck™P9800 CS 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: fluteck™P9800 CS 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™P9800 CS 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.

fluteck P9800 CS PTFE Carbon Conductive Compound, unlike virgin PTFE, has an antistatic behaviour. The lower surface and volume resistivity prevents the accumulation of electric charge on the surface of the material.

Typical Application.

fluteck™P9800 CS PTFE Carbon Conductive Compound offers useful properties in various applications such as chemical resistance, thermal stability, cryogenic properties, low coefficient of friction, low surface energy and flame resistance.
These properties allow the application of Fluteck P9800 PTFE Carbon Conductive Compound in several fields such as Chemical, Electrical and Electronic, Petrochemical, Automotive, Mechanical, Medical, Aeronautics, Semiconductor and Food industry.
fluteck™P9800 CS PTFE Carbon Conductive Compound is ideal for the applications where static charges can became a problem and a hazard, e.g., in hydraulic transport of non- conductor fluids.

Storage and Handling.

fluteck™P9800 CS PTFE Carbon Conductive 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 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 fluoropolymer materials.
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™P9800 PTFE CS Carbon Conductive Compound is supplied in the following shapes and formats:
Semi-finished products: rods, tubes, sheets, tapes, strips. Shapes and sizes as per fluorseals™ General Size List and/as per customer request.
Machined parts: Shapes and sizes as per customer request.

Rev: 03/2015