

TECHNICAL DATA SHEET

fluteck® E200 FEP

Product Description.

fluorseals™ fluteck™ E200 FEP is a thermoplastic fluoropolymer based on fluorinated ethylene propylene (FEP).

Product Properties:

- Excellent mechanical properties
- Extremely high weathering resistance and UV stability
- High thermal resistance
- Good light transmission (visible and UV)
- Low friction behaviour
- Flame retardant
- Excellent chemical resistance
- Very low surface energy
- Excellent dielectric properties
- Very low surface roughness

Property	Method	Units	Specification	
Physical	Specific gravity	ASTM D 792	g/cm ³	2,12-2,16
	Water absorption, 24 hours	ASTM D 570	%	<0.01
	Mold shrinkage, along flow	ASTM D 955	%	3-5
Mechanical	Elongation, at break	ASTM D 638	%	≥300
	Tensile strength, at 23°C	ASTM D 638	MPa	≥ 25
	Tensile modulus, at 23°C	ASTM D 638	MPa	300-400
	Izod impact strength, notched	ASTM D 256	J/m	n/b
	Hardness Shore	ASTM D 2240	Shore D	50-55
Thermal	Peak Melting Temperature	ASTM D3418	°C	265
	Specific heat capacity, at 23°C	DSC	kJ kg ⁻¹ °C ⁻¹	0,2-0,3
	Thermal conductivity, at 23°C	ASTM E1530	W/mK	0.20
	Continuous Use Temperature		°C	204
	Oxygen Index, LOI	ASTM D2863	%	>95
	Flammability	UL94	-	V-0
Electrical	Dielectric Strength, 0,25mm thk	ASTM D149	kV/mm	>80
	Surface Resistivity	ASTM D257	Ohm	10 ¹⁷
	Volume Resistivity	ASTM D257	Ohm*cm	10 ¹⁸
	Arc Resistance	ASTM D495	s	>250

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Typical properties.

fluteck™E200 FEP is a fully fluorinated polymer preferred for parts and components requiring very good mechanical properties.

fluteck™E200 offers an excellent combination of properties typical of the fluoropolymer resins:

- Service temperature: fluteck™E200 offers excellent resistance to continuous service temperatures-working conditions from -100°C (-148°F) up to 200°C (392°F) and, for limited periods, even to higher temperatures; Product's low temperature resistance allows satisfactory performance down to -200° C (-328°F).
- Chemical properties: fluteck™E200 offers high inertness towards nearly all known chemicals. Only attacked by fluorine, molten alkali metal and molten sodium hydroxide. Its permeation characteristics are similar to those of PTFE with some advantage because of the absence of microporosity often present in PTFE
- Electrical properties: fluteck™E200 has outstanding dielectrical properties. Its volume resistivity remains unchanged even after prolonged soaking in water. The dielectric strength is high and unaffected by heat aging.

Typical Application.

fluteck™E200 FEP offers non-ageing characteristics, chemical inertness, exceptional dielectric properties, heat resistance, toughness and flexibility, low coefficient of friction, non-stick characteristics, negligible moisture absorption, low flammability, performance at temperature extremes and excellent weather resistance.

The largest proportion of fluteck™E200 FEP is used in electrical applications, such as hookup wire, interconnecting wire, thermocouple wire, computer wire, and molded parts for electrical and electronic components. Chemical applications include lined tanks, lined pipes and fittings, heat exchangers, over-braided hose, gaskets, component parts of valves, and laboratory ware. Mechanical uses include anti-stick applications such as conveyor belts and roll covers. fluteck™E200 FEP film is used in solar-collector windows because of its light weight, excellent weather resistance, high transparency, and easy installation.

Storage and Handling.

fluteck™E200 FEP can be stored for a long period of life and is exceptionally resistant to aging and weather conditions up to 20 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 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 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™E200 is supplied in the following shapes and formats:

Semi-finished products: rod and tubes through compression and spin-casting moulding. 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.

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