

# TECHNICAL DATA SHEET

## fluteck™ C 200

### ECTFE

#### Product Description.

fluteck™C200 ECTFE is a high performance thermoplastic fluoropolymer based on Ethylene Chlorotrifluoroethylene

#### Product Properties:

- Excellent mechanical properties
- Excellent weatherability
- Good abrasion resistance
- Excellent electrical-insulating properties
- Melt weldable
- High hardness
- Extremely low permeability
- Very low surface roughness
- Outstanding fire resistant
- Gamma and e-beam sterilizable

|            | Property   | Method      | Units                                | Specification    |
|------------|--|-------------|--------------------------------------|------------------|
| Physical   | Color  | -           | -                                    | Natural          |
|            | Specific gravity   | ASTM D 792  | g/cm <sup>3</sup>                    | 1.68             |
|            | Water absorption <sup>24 hours</sup>   | ASTM D 570  | %                                    | <0.10            |
|            | Mold shrinkage, along flow   | ASTM D 955  | %                                    | 2,5%             |
| Mechanical | Elongation, at break   | ASTM D 638  | %                                    | ≥200             |
|            | Tensile strength, at 23°C  | ASTM D 638  | MPa                                  | ≥40              |
|            | Tensile modulus, at 23°C   | ASTM D 638  | GPa                                  | 1-1,3            |
|            | Izod impact strength, notched at 23°C  | ASTM D 256  | J/m                                  | n/b              |
|            | Hardness Shore   | ASTM D 2240 | Shore D                              | 70               |
|            | Coefficient of friction<br>vs. Itself - Static<br>vs. Itself - Dynamic           | ASTM D1894  | %                                    | 0.20<br>0.20     |
| Thermal    | Peak Melting Temperature   | ASTM D3418  | °C                                   | 222              |
|            | Specific heat capacity, at 23°C  | DSC         | kJ kg <sup>-1</sup> °C <sup>-1</sup> | 0,95             |
|            | Thermal conductivity, at 40°C  | ASTM E1530  | W/mK                                 | 0.15             |
|            | Maximum service temperature, Air   |             | °C                                   | 150°C            |
|            | Coefficient of Linear Thermal Expansion,<br>from -30 to 50 °C<br>from 50 to 85°C | ASTM D696   | 10 <sup>-5</sup> mm/mm/°C            | 8<br>10          |
|            | Oxygen Index, LOI  | ASTM D2863  | %                                    | 52               |
| Electrical | Dielectric Strength,<br>0,025 mm<br>3,20 mm                                      | ASTM D149   | kV/mm                                | 80<br>14         |
|            | Dielectric Constant, 1MHz  | ASTM D257   | -                                    | 2.57             |
|            | Volume Resistivity   | ASTM D257   | Ohm·cm                               | 10 <sup>17</sup> |

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#### Typical properties.

fluteck™ C 200 ECTFE is a fluorinated polymer preferred for parts and components requiring very good mechanical properties.

fluteck™ C 200 offers an excellent combination of properties typical of partially fluorinated fluoropolymer:

- Service Temperature: fluteck™ C 200 offers excellent resistance to continuous service temperatures-working conditions from -100°C (-148°F) up to 150°C (302°F)
- Chemical resistance: fluteck™ C 200 resists attack by most industrial chemicals. The exceptions include alkali metal complexes and organic amines. Chlorine gas, nitrogen tetraoxide, and a number of halogenated solvents are absorbed by fluteck™ C 200. Most silicones could induce stress cracking.
- Physical properties: fluteck™ C 200 is extremely resilient with great mechanical strength and the vales remain constant over the entire rane of temperature.As most fluoropolymers, it has an outstanding weathering resistance. It also resists high-energy gamma and beta radiation up to 100 Mrad. Due to the smooth surface of component made from fluteck™ C 200, there is nowhere for microbiological fauna to take hold and glow. It is easily worked and welded.

The unique balance of properties exhibited by fluteck™ C 200 ECTFE Suits it to many applications such as in bleaching towers, in production, transfer and storage of sulfuric acids, in transport vassels for hazardous materials and in clean room ductwork. In the chemical process industry it is often used in chlorine/caustic environment in cell covers, outlet boxes, lined pipes and tanks.

#### Storage and Handling.

fluteck™ C 200 ECTFE can be stored for a long period of life when kept in a clean and dry area at ambient temperature.

The machining of semi-finished part is very similar to that of nylon and may often create internal stresses. These stresses may lead to the warping of a component. For best result, particularly on long production runs, use sharp tools, avoid excessive clamping or cutting forces and prevent overheating by use of coolants .

#### 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™ C 200 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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# fluorseals



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