Celanese
The chemistry inside innovation

CELAPEX ® PKX-201 - PEEK

Experimental Grade. Please contact your Celanese representative for further information.

Description

Celapex® PKX-201 is a developmental grade of ultra high flow glass fiber (30%) reinforced polyether ether ketone (PEEK) for injection molding. It has food contact compliance for US (FDA) & EU. The typical applications of this product include complex geometry (thin wall, long flow length, high precision) injection molded parts.

Physical properties	Value	Unit	Test Standard
Density	**1530**	kg/m³	ISO 1183
Molding shrinkage, parallel	**0.4**	%	ISO 294-4, 2577
Molding shrinkage, normal	**0.6**	%	ISO 294-4, 2577

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**13000**	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	**190**	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	**2.1**	%	ISO 527-2/1A
Flexural modulus, 23°C	**11800**	MPa	ISO 178
Flexural strength, 23°C	**278**	MPa	ISO 178
Charpy impact strength, 23°C	**51**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	**13**	kJ/m²	ISO 179/1eA

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	**343**	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	**143**	°C	ISO 11357-1,-2,-3
DTUL at 1.8 MPa	**327**	°C	ISO 75-1, -2
CLTE below Tg, parallel	**0.16**	E-4/°C	ISO 11359-2
CLTE above Tg, parallel	**0.1**	E-4/°C	ISO 11359-2
CLTE below Tg, normal	**0.46**	E-4/°C	ISO 11359-2
CLTE above Tg, normal	**1.02**	E-4/°C	ISO 11359-2

Electrical properties	Value	Unit	Test Standard
Relative permittivity, 1MHz	**3.9**	-	IEC 60250
Dissipation factor, 1MHz	**50**	E-4	IEC 60250
Volume resistivity	**>1E14**	Ohm*m	IEC 60093
Electric strength	**30**	kV/mm	IEC 60243-1
CTI 100 drops value	**150**	-	IEC 60112

Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Necessary low maximum residual moisture content	**0.03**	%	-
Drying time	**3 - 4**	h	-
Drying temperature	**140 - 150**	°C	-
Temperature	**Value**	**Unit**	**Test Standard**
Zone1 temperature	**350 - 370**	°C	-
Zone2 temperature	**360 - 380**	°C	-
Zone3 temperature	**360 - 380**	°C	-
Nozzle temperature	**360 - 380**	°C	-
Melt temperature	**360 - 400**	°C	-
Mold temperature	**160 - 190**	°C	-
Pressure	**Value**	**Unit**	**Test Standard**
Back pressure max.	**20**	bar	-
Speed	**Value**	**Unit**	**Test Standard**
Injection speed	**medium-fast**	-	-
Screw Speed	**Value**	**Unit**	**Test Standard**
Screw speed diameter, 16mm	**medium**	RPM	-
Screw speed diameter, 25mm	**medium**	RPM	-

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Screw speed diameter, 40mm	**medium**	RPM	-

Characteristics

Special Characteristics	Processing
High flow, Low warpage	Injection molding

Product Categories	Delivery Form
Glass reinforced	Pellets

General Disclaimer

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values. Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products. The products mentioned herein are not intended for use in medical or dental implants.

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