Celanese
The chemistry inside innovation™

CELANEX® 2300 ICF20

20% PIR-CF (post-industrial recycled carbon fiber) reinforced, electroconductive grade
Chemical abbreviation according to ISO 1043-1: PBT Moulding compound ISO 7792- PBT, MGHR, 08-160C, CF20
Polybutylene terephthalate, containing 20% of PIR (post-industrial recycled) carbon fibre.
Preliminary data Sheet

Product information

Part Marking Code	> PBT-CF20 <		ISO 11469

Rheological properties

Melt volume-flow rate	15	cm^3/10min	ISO 1133
Temperature	250	°C	
Load	2.16	kg	
Viscosity number	80	cm^3/g	ISO 307, 1157, 1628
Moulding shrinkage range, parallel	0.2 - 0.3	%	ISO 294-4, 2577
Moulding shrinkage range, normal	0.7 - 0.8	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	16000	MPa	ISO 527-1/-2
Stress at break, 5mm/min	150	MPa	ISO 527-1/-2
Strain at break, 5mm/min	2.5	%	ISO 527-1/-2
Charpy impact strength, 23°C	48	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	5	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -30°C	4.7	kJ/m^2	ISO 179/1eA

Thermal properties

Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3

Electrical properties

Volume resistivity	3	Ohm.m	IEC 62631-3-1
Surface resistivity	37	Ohm	IEC 62631-3-2

Other properties

Humidity absorption, 2mm	0.15	%	Sim. to ISO 62
Water absorption, 2mm	0.4	%	Sim. to ISO 62
Density	1400	kg/m^3	ISO 1183

Injection

Drying Temperature	120 - 140	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	0.02	%
Screw tangential speed	0.12 - 0.17	m/s
Max. mould temperature	75 - 100	°C

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Injection speed	fast

Characteristics

Additives	Release agent

Additional information

Injection molding	Melt Temperature 260-270 °C Mold Temperature *) 75-85 °C Maximum Barrel Residence Time **) 5-10 min Injection Speed fast Peripheral screw speed max.0,3 m/sec Back Pressure 10-30 bar Injection Pressure 600-1000 bar Holding Pressure 400-800 bar Nozzle Design open design preferred Injection speed, injection pressure and holding pressure have to be optimized to the individual article geometry. To avoid material degradation during processing low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided. For grades containing flame retardants, a maximum temperature of 265 °C should not be exceeded. Celanese recommends only externally heated hot runner systems. *) For moulded parts with especially high requirements to the surface quality or dimensional stability, a mold temperature of up to 110 °C can be advantageous. **) If the cylinder temperatures are higher than the recommended maximum temperatures, the max. residence time in the barrel has to be reduced.

Processing Texts

Pre-drying	CELANEX should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be =< - 30° C. The time between drying and processing should be as short as possible.
Longer pre-drying times/storage	For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature to 100° C.
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Injection Pressure 600-1000 bar
Holding Pressure 400-800 bar
Nozzle Design open design preferred

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**) If the cylinder temperatures are higher than the recommended maximum temperatures, the max. residence time in the barrel has to be reduced.

Injection molding Preprocessing	To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0,02%. The drying should be done in a dry-air dryer (dew point < -30°C) with a temperature of 120 to 140 °C and a drying time of 2 to 4 hours. In case of longer residence times in the dry-air dryer, the temperature should be reduced to 100°C. The time between drying and processing should be kept as short as possible. The processing machine feed hopper should be closed during the processing operation.