Celanese
The chemistry inside innovation™

CELSTRAN® PA66-GF50-0111P10/11

PA66/6 Copolymer with 50% reinforced long glass fiber, high gloss, UL - listing (f1)
Material code according to ISO 1043-1: PA66

Nylon 66/6 Copolymer reinforced by 50 weight percent long glass fibers. The pellets are cylindrical and normally as well as the embedded fibers 10 mm long.

Parts molded of CELSTRAN have outstanding mechanical properties such as high strength and stiffness combined with high heat deflection. The notched impact strength is increased at elevated and low temperatures due to the fiber skeleton built in the parts. The long fiber reinforcement reduces creep significantly.

The very isotropic shrinkage in the molded parts minimizes the warpage.

Complex parts can be manufactured with high reproducibility by injection molding.

Can be used for substituting die cast metal with the advantage of Weight reduction, no corrosion problems, no post treatment.

Typical mechanical properties

	dry/cond.		
Tensile Modulus	16500 / 11600	MPa	ISO 527-1/-2
Stress at break, 5mm/min	275 / 180	MPa	ISO 527-1/-2
Strain at break, 5mm/min	2.2 / 2.5	%	ISO 527-1/-2
Flexural Modulus	13400 / 11500	MPa	ISO 178
Flexural Strength	380 / 300	MPa	ISO 178
Charpy impact strength, 23°C	100 / 50	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	80 / -	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	40 / 36	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	42 / -	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	38 / 38	kJ/m²	ISO 180/1A
Izod impact strength, 23°C	82 / -	kJ/m²	ISO 180/1U
Izod impact strength, -30°C	74	kJ/m²	ISO 180/1U

Thermal properties

Melting temperature, 10°C/min	240	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	235	°C	ISO 75-1/-2
Temp. of deflection under load, 8 MPa	220	°C	ISO 75-1/-2

Flammability

Burning Behav. at thickness h	HB	class	UL 94
Thickness tested	1.50	mm	UL 94
UL recognition	yes		UL 94

Other properties

Humidity absorption, 2mm	1	%	Sim. to ISO 62
Density	1560	kg/m³	ISO 1183

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Injection

Drying Temperature	70 - 80	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	0.15	%
Screw tangential speed	0.1	m/s
Max. mould temperature	90 - 120	°C
Back pressure	3	MPa
Injection speed	medium	

Additional information

Injection molding

During the processing of CELSTRAN it is important to watch and control melt shear, for excessive shear reduces fiber length and mechanical performance as well.

Processing recommendation:

- Conventional 3 zone screw, screw diameter minimum 40 mm
- Design flow channels for low melt shear
- Back pressure and screw rotation to realize a continous plastification performance and thus a homogeneous melt.
- Apply higher temperature settings than for short fiber compounds

Melt temperature (in the srew anteroom) 310-325 °C
Mold surface temperature 90-120 °C

Processing Texts

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Injection molding Preprocessing	It is recommended to dry in a dehumidifying dryer: 4 hours at 80 °C