

CELSTRAN® PP-GF20-0553 Black - PP

Description

Polypropylene with 20% reinforced long-glass-fiber

Material code according to ISO 1043-1: PP Polypropylene copolymer reinforced with 20weight percent long glass fibers.Black. Low emission. The fibers are chemically coupled to the polypropylene matrix. The pellets are cylindrical and normally as well as the embedded fibers 11 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. Application field: Functional/structural parts for automotive

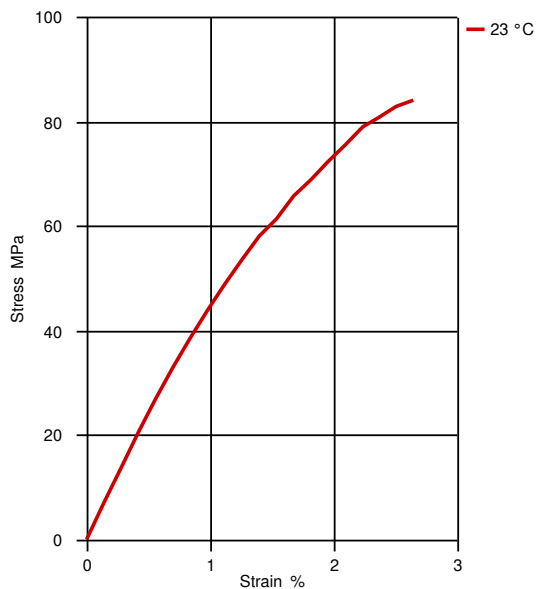
Physical properties	Value	Unit	Test Standard
Density	1030	kg/m ³	ISO 1183
Molding shrinkage, parallel (flow)	0.4	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	0.5	%	ISO 294-4, 2577

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	4700	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	84	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	2.5	%	ISO 527-2/1A
Flexural modulus, 23 °C	4500	MPa	ISO 178
Flexural modulus, 80 °C	3400	MPa	ISO 178
Flexural strength, 23 °C	140	MPa	ISO 178
Flexural strength, 80 °C	90	MPa	ISO 178
Charpy impact strength, 23 °C	56	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30 °C	60	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23 °C	20	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30 °C	20	kJ/m ²	ISO 179/1eA

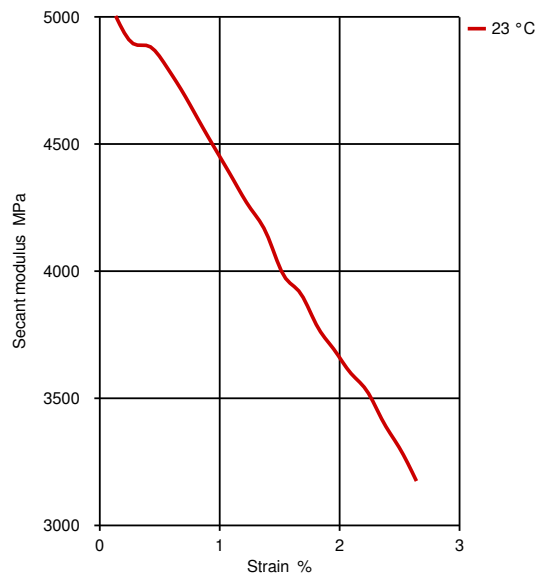
Thermal properties	Value	Unit	Test Standard
DTUL at 1.8 MPa	159	°C	ISO 75-1, -2
DTUL at 8.0 MPa	136	°C	ISO 75-1, -2
Flammability at thickness h	HB	class	UL 94
thickness tested (h)	1.00	mm	UL 94

Diagrams

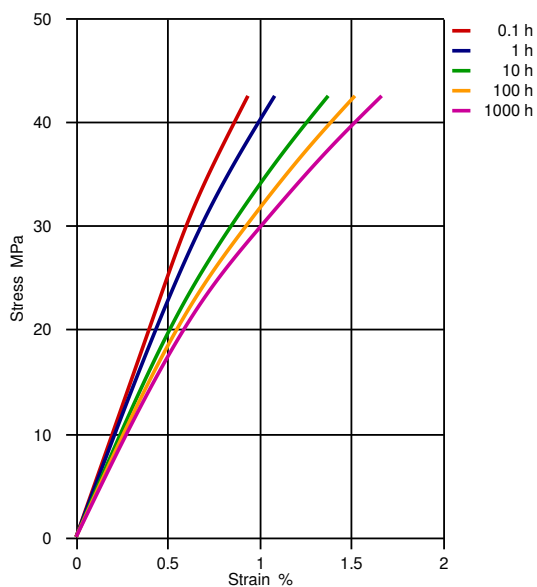
Stress-strain



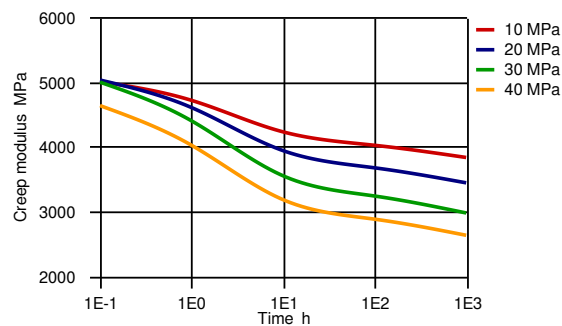
Secant modulus-strain



Stress-strain (isochronous) 23 °C



Creep modulus-time 23 °C



Typical injection moulding processing conditions

Pre Drying

	Value	Unit
Necessary low maximum residual moisture content	0.2	%
Drying time	2	h
Drying temperature	90 - 100	°C

Temperature	Value	Unit
Feeding zone temperature	20 - 50	°C
Zone1 temperature	200 - 220	°C
Zone2 temperature	210 - 230	°C
Zone3 temperature	220 - 250	°C
Zone4 temperature	220 - 250	°C
Nozzle temperature	220 - 250	°C
Melt temperature	220 - 270	°C
Mold temperature	30 - 70	°C
Hot runner temperature	230 - 250	°C

Pressure	Value	Unit
Back pressure max.	30	bar

Speed	Value
Injection speed	slow

Screw Speed	Value	Unit
Screw speed diameter, 40mm	50	RPM
Screw speed diameter, 55mm	35	RPM
Screw speed diameter, 75mm	25	RPM

Other text information

Pre-drying

It is normally not necessary to dry CELSTRAN PP. However, should there be surface moisture (condensate) on the molding compound as a result of incorrect storage, drying is required.

Longer pre-drying times/storage

The product can then be stored in standard conditions until processed.

Characteristics

Special Characteristics	Product Categories
Auto spec approved, Heat resistant	Low emission, Glass reinforced, Impact modified

Processing	Delivery Form
Injection molding	Pellets

Other Approvals

OEM	Specification
Chrysler (FCA)	CPN5149
Daimler	5404.74
Geely	Q/JLY J7111001A-2016
GM	GMW15890P-PP-GF20E BLK