Ticona
Performance Driven Solutions™

CELSTRAN® +PP-GF40-04CN03 | PP | Glass Reinforced

Description

Material code according to ISO 1043-1: PP

Polypropylene with 40 weight percent ash content, long glass fibers reinforced. The fibers are chemically coupled to the polypropylene matrix. 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.

Application field: Functional/structural parts for automotive

Physical properties	Value	Unit	Test Standard
Density	**1220**	kg/m³	ISO 1183

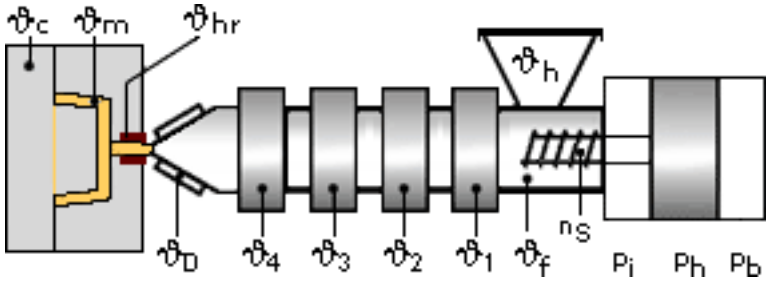
Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	**8600**	MPa	ISO 527-2/1A
Tensile modulus (80°C)	**6300**	MPa	ISO 527-2/1A
Tensile strength (80°C)	**84**	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	**135**	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	**2**	%	ISO 527-2/1A
Elongation at break (80°C)	**2.2**	%	ISO 527-2/1A
Flexural modulus (23°C)	**7800**	MPa	ISO 178
Flexural strength (23°C)	**185**	MPa	ISO 178
Charpy impact strength @ 23°C	**60.0**	kJ/m²	ISO 179/1eU
Charpy impact strength @ -30°C	**50.0**	kJ/m²	ISO 179/1eU
Charpy notched impact strength @ 23°C	**32.0**	kJ/m²	ISO 179/1eA
Charpy notched impact strength @ -30°C	**35.0**	kJ/m²	ISO 179/1eA

Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	**165**	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	**158**	°C	ISO 75-1/-2
DTUL @ 8.0 MPa	**138**	°C	ISO 75-1/-2

Ticona
Performance Driven Solutions™

CELSTRAN® +PP-GF40-04CN03 | PP | Glass Reinforced

Typical injection moulding processing conditions



Pre Drying:

Necessary low maximum residual moisture content: 0.2%

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. A circulating air drying cabinet can be used for this purpose if the gran

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

Drying time: 4 h

Drying temperature: 90 - 100 °C

Temperature:

	ϑManifold	ϑMold	ϑMelt	ϑNozzle	ϑZone4	ϑZone3	ϑZone2	ϑZone1	ϑFeed
min (°C)	230	30	230	240	250	240	230	220	20
max (°C)	270	70	270	250	250	250	240	230	50

Pressure:

	Inj press	Hold press	Back pressure
min (bar)	600	400	0
max (bar)	1200	800	30

Speed:

Injection speed: slow

Screw speed

Screw diameter (mm)	16	25	40	55	75
Screw speed (RPM)	-	-	50	35	25

Special Info:

Assessment of mechanical values using an injection molding machine with dedicated screw. Implementation: Feb. 2010

Contact Information

Americas

Ticona North American Headquarters
Product Information Service

Europe

Ticona GmbH
Information Service

Celanese