

Celstran® PP-GF40-0403 P10/10

Polypropylene

Celanese Corporation

Message:

Material code according to ISO 1043-1: PP

Heating stabilized polypropylene reinforced with 40 weight percent long glass fibers. 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

General Information			
Filler / Reinforcement	Long glass fiber, 40% filler by weight		
Features	Low warpage		
	Rigidity, high		
	High strength		
	Chemical coupling		
	Good creep resistance		
	Low temperature impact resistance		
Uses	Application in Automobile Field		
Processing Method	Injection molding		
Resin ID (ISO 1043)	PP		
Physical	Nominal Value	Unit	Test Method
Density	1.22	g/cm ³	ISO 1183
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
--	9300	MPa	ISO 527-2/1A/1
80°C	6200	MPa	ISO 527-2/1A
Tensile Stress			
Fracture	135	MPa	ISO 527-2/1A/5
80°C	76.0	MPa	ISO 527-2/1A
Tensile Strain			
Fracture	2.0	%	ISO 527-2/1A/5
Fracture, 80°C	2.3	%	ISO 527-2/1A
Flexural Modulus			ISO 178
23°C	9000	MPa	ISO 178
80°C	6400	MPa	ISO 178
Flexural Stress			ISO 178
23°C	200	MPa	ISO 178

80°C	120	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	30	kJ/m ²	ISO 179/1eA
23°C	25	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	60	kJ/m ²	ISO 179/1eU
23°C	62	kJ/m ²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
1.8 MPa, not annealed	157	°C	ISO 75-2/A
8.0 MPa, not annealed	134	°C	ISO 75-2/C
Melting Temperature ¹	166	°C	ISO 11357-3
Injection	Nominal Value	Unit	
Drying Temperature	90.0 - 100	°C	
Drying Time	2.0	hr	
Suggested Max Moisture	0.20	%	
Rear Temperature	250 - 260	°C	
Middle Temperature	260 - 270	°C	
Front Temperature	270 - 280	°C	
Nozzle Temperature	280 - 290	°C	
Processing (Melt) Temp	260 - 290	°C	
Mold Temperature	40.0 - 70.0	°C	
Injection Pressure	60.0 - 120	MPa	
Injection Rate	Slow		
Holding Pressure	40.0 - 80.0	MPa	
Back Pressure	0.00 - 3.00	MPa	
Injection instructions			
Feed Temperature: 20 to 50°CZone 4 Temperature: 280 to 290°CManifold Temperature: 260 to 290°C			
NOTE			
1.	10°C/min		

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Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China



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