



Celstran® +PP-GF40-04CN03/10

Celanese Corporation - Polypropylene

Tuesday, November 5, 2019

General Information

Product 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

General

Material Status	• Commercial: Active
Availability	• North America
Filler / Reinforcement	• Long Glass Fiber, 40% Filler by Weight
Features	<ul style="list-style-type: none">• Chemically Coupled• Creep Resistant• Good Impact Resistance• High Stiffness• High Strength• Low Temperature Impact Resistance• Low Warpage
Uses	• Automotive Applications
RoHS Compliance	• Contact Manufacturer
Forms	• Pellets
Processing Method	• Injection Molding
Resin ID (ISO 1043)	• PP

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	1.22	g/cm ³	ISO 1183
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
--	1.32E+6	psi	ISO 527-2/1A/1
176°F	928000	psi	ISO 527-2/1A
Tensile Stress (Break)	18100	psi	ISO 527-2/1A/5
Tensile Stress (176°F)	11600	psi	ISO 527-2/1A

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Mechanical	Nominal Value	Unit	Test Method
Tensile Strain			
Break	2.2	%	ISO 527-2/1A/5
Break, 176°F	2.0	%	ISO 527-2/1A
Flexural Modulus			ISO 178
73°F	1.31E+6	psi	
176°F	899000	psi	
Flexural Stress			ISO 178
73°F	29000	psi	
176°F	17400	psi	
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F	15	ft-lb/in ²	
73°F	14	ft-lb/in ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	23	ft-lb/in ²	
73°F	25	ft-lb/in ²	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (264 psi, Unannealed)	316	°F	ISO 75-2/A
Heat Deflection Temperature (1160 psi, Unannealed)	280	°F	ISO 75-2/C
Melting Temperature ²	331	°F	ISO 11357-3

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	194 to 212	°F
Drying Time	4.0	hr
Suggested Max Moisture	0.20	%
Rear Temperature	428 to 446	°F
Middle Temperature	446 to 464	°F
Front Temperature	464 to 482	°F
Nozzle Temperature	464 to 482	°F
Processing (Melt) Temp	446 to 518	°F
Mold Temperature	86 to 158	°F
Injection Pressure	8700 to 17400	psi
Injection Rate	Slow	
Holding Pressure	5800 to 11600	psi
Back Pressure	0.00 to 435	psi

Injection Notes

Manifold Temperature: 230 to 270°C
Zone 4 Temperature: 250 to 250°C
Feed Temperature: 20 to 50°C

Notes

¹ Typical properties: these are not to be construed as specifications.

² 10°C/min