Celstran® PP-GF50-0403 P10

Celanese Corporation - Polypropylene

Tuesday, November 5, 2019

General Information

Product Description

Material code according to ISO 1043-1: PP

Heat stabilized polypropylene reinforced with 50 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. (-0403 = heat stabilized, -0453 = low emission)

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	• Europe	• North America	
Filler / Reinforcement	• Long Glass Fiber, 50% Filler by Weight		
Additive	• Heat Stabilizer		
Features	• Chemically Coupled • Creep Resistant • Good Impact Resistance	• Heat Stabilized • 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	1.34	g/cm³	ISO 1183
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
--	1.74E+6	psi	ISO 527-2/1A/1
176°F	1.23E+6	psi	ISO 527-2/1A
Tensile Stress (Break)	21000	psi	ISO 527-2/1A/5
Tensile Stress (176°F)	13100	psi	ISO 527-2/1A

Celstran® PP-GF50-0403 P10

Celanese Corporation - Polypropylene

Mechanical	Nominal Value	Unit	Test Method
Tensile Strain			
Break	2.0	%	ISO 527-2/1A/5
Break, 176°F	2.2	%	ISO 527-2/1A
Flexural Modulus			ISO 178
73°F	1.87E+6	psi	
176°F	1.31E+6	psi	
Flexural Stress			ISO 178
73°F	34100	psi	
176°F	18900	psi	

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F	18	ft·lb/in²	
73°F	17	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	36	ft·lb/in²	
73°F	38	ft·lb/in²	

Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (264 psi, Unannealed)	318	°F	ISO 75-2/A
Melting Temperature [2]	329	°F	ISO 11357-3

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	194 to 212	°F
Drying Time	2.0	hr
Suggested Max Moisture	0.20	%
Rear Temperature	482 to 500	°F
Middle Temperature	500 to 518	°F
Front Temperature	518 to 536	°F
Nozzle Temperature	536 to 554	°F
Processing (Melt) Temp	500 to 554	°F
Mold Temperature	104 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: 260 to 290°C
Zone 4 Temperature: 280 to 290°C
Feed Temperature: 20 to 50°C

Notes

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

[2] 10°C/min