Celstran® +PP-GF45-05X551/1X

Celanese Corporation - Polypropylene

Tuesday, November 5, 2019

General Information

Product Description

Material code according to ISO 1043-1: PP

Polypropylene with 45 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. Concentrate for blending down on a fiber content of 20-30%

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, 45% Filler by Weight		
Features	• Chemically Coupled • Creep Resistant • Good Impact Resistance	• High Heat 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	1.28	g/cm³	ISO 1183
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
--	1.28E+6	psi	ISO 527-2/1A/1
176°F	885000	psi	ISO 527-2/1A
Tensile Stress (Break)	16000	psi	ISO 527-2/1A/5
Tensile Stress (176°F)	11600	psi	ISO 527-2/1A
Tensile Strain			
Break	2.1	%	ISO 527-2/1A/5
Break, 176°F	2.6	%	ISO 527-2/1A
Flexural Modulus			ISO 178
73°F	1.31E+6	psi	
176°F	870000	psi	

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Mechanical	Nominal Value	Unit	Test Method
Flexural Stress			ISO 178
73°F	24700	psi	
176°F	13100	psi	
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength			ISO 179/1eA
-22°F	14	ft·lb/in²	
73°F	15	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	39	ft·lb/in²	
73°F	38	ft·lb/in²	
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
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