# Celstran® +PP-GF40-04CN03/10

## Celanese Corporation - Polypropylene

### 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 | | | |
|---|---|---|---|
| Filler / Reinforcement | • Long Glass Fiber, 40% Filler by Weight | | |
| Features | • Chemically Coupled<br>• Creep Resistant<br>• Good Impact Resistance | • High Stiffness<br>• High Strength<br>• 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/cm³ | 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 |

# Celstran® +PP-GF40-04CN03/10

## Celanese Corporation - Polypropylene

| 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/in² | |
| 73°F | 14 | ft·lb/in² | |
| Charpy Unnotched Impact Strength | | | ISO 179/1eU |
| -22°F | 23 | ft·lb/in² | |
| 73°F | 25 | 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 |
|---|---|---|
| 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 | 86.0 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