# Celanex® 4302

## Ticona - Polybutylene Terephthalate

Tuesday, June 18, 2013

## General Information

**Product Description**

Celanex 4302 is a 30% glass reinforced PBT designed for improved mold flow, warp resistance and surface appearance.

**General**

| | | | |
|---|---|---|---|
| Material Status | • Commercial: Active | | |
| Availability | • Africa & Middle East<br>• Asia Pacific | • Europe<br>• Latin America | • North America<br>• South America |
| Filler / Reinforcement | • Glass Fiber Reinforcement, 30% Filler by Weight | | |
| Additive | • Impact Modifier | | |
| Features | • Good Flow<br>• Good Surface Finish | • Impact Modified<br>• Warp Resistant | |
| RoHS Compliance | • Contact Manufacturer | | |
| Automotive Specifications | • FORD WSF-M4D737-A Color: Black | • FORD WSF-M4D737-A Color: Natural | • GM GMP.PBT.010 Color: Colors |

## ASTM & ISO Properties [1]

| Physical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Specific Gravity | 1.49 | | ASTM D792 |
| Density | 1.49 | g/cm³ | ISO 1183 |
| Molding Shrinkage - Flow | 0.0030 | in/in | ASTM D955 |
| Molding Shrinkage | | | ISO 294-4 |
| Across Flow | 0.40 to 0.60 | % | |
| Flow | 0.20 to 0.40 | % | |
| Water Absorption (Equilibrium, 73°F, 50% RH) | 0.15 | % | ISO 62 |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Modulus | 1.29E+6 | psi | ISO 527-2/1A/1 |
| Tensile Strength (Break, 73°F) | 16000 | psi | ASTM D638 |
| Tensile Stress (Break) | 17400 | psi | ISO 527-2/1A/5 |
| Tensile Elongation (Break, 73°F) | 3.0 | % | ASTM D638 |
| Tensile Strain (Break) | 2.8 | % | ISO 527-2/1A/5 |
| Flexural Modulus (73°F) | 1.26E+6 | psi | ISO 178 |
| Flexural Strength (73°F) | 27600 | psi | ISO 178 |
| **Impact** | **Nominal Value** | **Unit** | **Test Method** |
| Charpy Notched Impact Strength | | | ISO 179/1eA |
| -22°F | 3.9 | ft·lb/in² | |
| 73°F | 4.7 | ft·lb/in² | |
| Charpy Unnotched Impact Strength | | | ISO 179/1eU |
| -22°F | 20 | ft·lb/in² | |
| 73°F | 27 | ft·lb/in² | |
| Notched Izod Impact Strength (73°F) | 6.6 | ft·lb/in² | ISO 180/1A |
| **Thermal** | **Nominal Value** | **Unit** | **Test Method** |
| Heat Deflection Temperature (66 psi, Unannealed) | 424 | °F | ISO 75-2/B |
| Deflection Temperature Under Load (66 psi, Annealed) | 421 | °F | ASTM D648 |

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# Celanex® 4302
## Ticona - Polybutylene Terephthalate

| Thermal | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Deflection Temperature Under Load | | | ASTM D648 |
| 264 psi, Unannealed | 343 | °F | |
| Heat Deflection Temperature (264 psi, Unannealed) | 343 | °F | ISO 75-2/A |
| Glass Transition Temperature [2] | 131 | °F | ISO 11357-2 |
| Peak Melting Temperature | 437 | °F | ASTM D3418 |
| Melting Temperature [2] | 437 | °F | ISO 11357-3 |
| CLTE - Flow | 0.000010 | in/in/°F | ISO 11359-2 |
| CLTE - Transverse | 0.000069 | in/in/°F | ISO 11359-2 |

| Electrical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Dielectric Strength [3] | 540 | V/mil | ASTM D149 |

| Flammability | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Flame Rating | HB | | UL 94 |

## Processing Information

| Injection | Nominal Value | Unit |
|---|---|---|
| Drying Temperature | 248 to 266 | °F |
| Drying Time | 4.0 | hr |
| Suggested Max Moisture | 0.020 | % |
| Suggested Max Regrind | 25 | % |
| Hopper Temperature | 68.0 to 122 | °F |
| Rear Temperature | 446 to 464 | °F |
| Middle Temperature | 455 to 482 | °F |
| Front Temperature | 455 to 482 | °F |
| Nozzle Temperature | 482 to 500 | °F |
| Processing (Melt) Temp | 455 to 500 | °F |
| Mold Temperature | 149 to 199 | °F |
| Injection Rate | Moderate-Fast | |
| Back Pressure | 0.00 to 50.0 | psi |

**Injection Notes**

Manifold Temperature: 250 to 260°C
Zone 4 Temperature: 240 to 260°C
Feed Temperature: 230 to 240°C

### Notes

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

[2] 10°C/min

[3] Method A (Short-Time)

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