

# Celanex® 4202

## Celanese Corporation - Polybutylene Terephthalate

Monday, November 4, 2019

General Information					
Product Description					
Celanex 4202 is a 15% glass reint	forced, impact modified polybutylene tere	ephthalate with excellent surface appear	rance.		
General					
Material Status	Commercial: Active				
Availability	<ul><li>Africa &amp; Middle East</li><li>Asia Pacific</li></ul>	<ul><li>Europe</li><li>Latin America</li></ul>	North America		
Filler / Reinforcement	Glass Fiber, 15% Filler by V	Veight			
Additive	Impact Modifier				
Features	<ul> <li>Good Surface Finish</li> </ul>	Impact Modified			
RoHS Compliance	Contact Manufacturer				
Automotive Specifications	• FORD ESF-M4D341-C	GM GMP.PBT.006 Color: Black	GM GMP.PBT.006 Color: Natural		

Density         1.38 g/cm³         ISO 1183           Melt Mass-Flow Rate (MFR) (250°C/2.16 kg)         4.5 g/10 min         ISO 1133           Molding Shrinkage         ISO 294-4           Across Flow         0.90         %           Flow         0.40         %           Water Absorption (Equilibrium, 73°F, 50% RH)         0.16         %         ISO 62           Mechanical         Nominal Value         Unit         Test Method           Tensile Modulus         754000         psi         ISO 527-2/1A/5           Tensile Stress (Break)         12500         psi         ISO 527-2/1A/5           Tensile Strain (Break)         4.4         %         ISO 527-2/1A/5           Flexural Modulus (73°F)         740000         psi         ISO 178           Impact         Nominal Value         Unit         Test Method           Charpy Notched Impact Strength         2.7 ft.lb/in²         ISO 179/1eA           -22°F         2.7 ft.lb/in²         ISO 179/1eU           73°F         18 ft.lb/in²         ISO 179/1eU           Charpy Unnotched Impact Strength         25 ft.lb/in²         ISO 179/1eU           -22°F         18 ft.lb/in²         ISO 179/1eU           73°F         25 ft.lb/in²         ISO	ASTM & ISO Properties <sup>1</sup>					
Melt Mass-Flow Rate (MFR) (250°C/2.16 kg)         4.5         g/10 min         ISO 1133           Molding Shrinkage         150 294-4           Across Flow         0.90         %           Flow         0.40         %           Water Absorption (Equilibrium, 73°F, 50% RH)         0.16         %         ISO 62           Mechanical         Nominal Value         Unit         Test Method           Tensile Modulus         754000         psi         ISO 527-2/1A           Tensile Stress (Break)         12500         psi         ISO 527-2/1A/5           Tensile Stress (Break)         4.4         %         ISO 527-2/1A/5           Tensile Stress (Break)         740000         psi         ISO 178           Flexural Modulus (73°F)         740000         psi         ISO 178           Flexural Stress (73°F)         20500         psi         ISO 178           Impact         Nominal Value         Unit         Test Method           Charpy Notched Impact Strength         2.7         ft·lb/in²         ISO 179/1eU           -22°F         2.7         ft·lb/in²         ISO 179/1eU           -22°F         18         ft·lb/in²         ISO 180/1A           Hard Cost         18         ft·lb/in² <th>Physical</th> <th>Nominal Value</th> <th>Unit</th> <th>Test Method</th>	Physical	Nominal Value	Unit	Test Method		
Molding Shrinkage         1SO 294-4           Across Flow         0.90         %           Flow         0.40         %           Water Absorption (Equilibrium, 73°F, 50% RH)         0.16         %           Mechanical         Nominal Value         Unit         Test Method           Tensile Modulus         754000         psi         1S0 527-2/1A           Tensile Stress (Break)         12500         psi         1S0 527-2/1A/5           Tensile Strain (Break)         4.4         %         1S0 527-2/1A/5           Tensile Strain (Break)         740000         psi         1S0 178           Flexural Modulus (73°F)         75000         psi         1S0 178           Flexural Stress (73°F)         20500         psi         1S0 178           Impact         Nominal Value         Unit         Test Method           Charpy Notched Impact Strength         2.7         ft lb/in²         1S0 179/1eA           -22°F         2.7         ft lb/in²         1S0 179/1eU           -22°F         18         ft lb/in²         1S0 180/1A           Charpy Unnotched Impact Strength         2.5         ft lb/in²         1S0 180/1A           Hard         18         ft lb/in²         1S0 180/1A </td <td>Density</td> <td>1.38</td> <td>g/cm³</td> <td>ISO 1183</td>	Density	1.38	g/cm³	ISO 1183		
Across Flow   0.90 %   1.00	Melt Mass-Flow Rate (MFR) (250°C/2.16 kg)	4.5	g/10 min	ISO 1133		
Flow   1.0.4	Molding Shrinkage			ISO 294-4		
Water Absorption (Equilibrium, 73°F, 50% RH)         0.16 %         ISO 62           Mechanical         Nominal Value         Unit         Test Method           Tensile Modulus         754000 psi         ISO 527-2/1A           Tensile Stress (Break)         12500 psi         ISO 527-2/1A/5           Tensile Strain (Break)         4.4 %         ISO 527-2/1A/5           Flexural Modulus (73°F)         740000 psi         ISO 178           Flexural Stress (73°F)         740000 psi         ISO 178           Impact         Nominal Value         Unit         Test Method           Charpy Notched Impact Strength         2.7 ft·lb/in²         ISO 179/1eA           -22°F         2.7 ft·lb/in²         ISO 179/1eU           -22°F         18 ft·lb/in²         ISO 179/1eU           -22°F         18 ft·lb/in²         ISO 180/1A           -22°F         18 ft·lb/in²         ISO 180/1A           73°F         25 ft·lb/in²         ISO 180/1A           Notched Izod Impact Strength (73°F)         18 ft·lb/in²         ISO 180/1A           Hardness         Nominal Value         Unit         Test Method           Shore Hardness (Shore D, 15 sec)         79         ISO 868           Thermal         Nominal Value         Unit	Across Flow	0.90	%			
Mechanical         Nominal Value         Unit         Test Method           Tensile Modulus         754000         psi         ISO 527-2/1A           Tensile Stress (Break)         12500         psi         ISO 527-2/1A/5           Tensile Strain (Break)         4.4         %         ISO 527-2/1A/5           Flexural Modulus (73°F)         740000         psi         ISO 178           Flexural Stress (73°F)         20500         psi         ISO 178           Impact         Nominal Value         Unit         Test Method           Charpy Notched Impact Strength         ISO 179/1eA         ISO 179/1eA           -22°F         2.7         ft lb/in²         ISO 179/1eU           -22°F         3.8         ft lb/in²         ISO 179/1eU           -22°F         1.8         ft lb/in²         ISO 179/1eU           -22°F         2.5         ft lb/in²         ISO 179/1eU           -22°F         3.8         ft lb/in²         ISO 179/1eU           -22°F         3.6         ft lb/in²         ISO 180/1A           Hardness         Nominal Value         Unit         Test Method           Shore Hardness (Shore D, 15 sec)         79         ISO 868           Thermal         Nominal Value<	Flow	0.40	%			
Tensile Modulus	Water Absorption (Equilibrium, 73°F, 50% RH)	0.16	%	ISO 62		
Tensile Stress (Break)         12500 psi         ISO 527-2/1A/5           Tensile Strain (Break)         4.4 %         ISO 527-2/1A/5           Flexural Modulus (73°F)         740000 psi         ISO 178           Flexural Stress (73°F)         20500 psi         ISO 178           Impact         Nominal Value Unit         Test Method           Charpy Notched Impact Strength         2.7 ft·lb/in²         ISO 179/1eA           -22°F r r3°F         2.7 ft·lb/in²         ISO 179/1eU           -22°F r3°F         18 ft·lb/in²         ISO 179/1eU           -22°F r3°F         18 ft·lb/in²         ISO 180/1A           Notched Izod Impact Strength (73°F)         5.6 ft·lb/in²         ISO 180/1A           Hardness         Nominal Value Unit         Test Method           Shore Hardness (Shore D, 15 sec)         79         ISO 868           Thermal         Nominal Value Unit         Test Method           Heat Deflection Temperature (66 psi, Unannealed)         421 °F         ISO 75-2/B           Heat Deflection Temperature (264 psi, Unannealed)         361 °F         ISO 11357-2           Melting Temperature 2         437 °F         ISO 11357-3	Mechanical	Nominal Value	Unit	Test Method		
Tensile Strain (Break)         4.4 %         ISO 527-2/1A/5           Flexural Modulus (73°F)         74000 psi         ISO 178           Flexural Stress (73°F)         20500 psi         ISO 178           Impact         Nominal Value         Unit         Test Method           Charpy Notched Impact Strength         2.7 ft·lb/in²         ISO 179/1eA           -22°F         2.7 ft·lb/in²         ISO 179/1eU           -22°F         18 ft·lb/in²         ISO 179/1eU           -22°F         18 ft·lb/in²         ISO 179/1eU           -22°F         18 ft·lb/in²         ISO 180/1A           73°F         25 ft·lb/in²         ISO 180/1A           Notched Izod Impact Strength (73°F)         5.6 ft·lb/in²         ISO 180/1A           Hardness         Nominal Value         Unit         Test Method           Shore Hardness (Shore D, 15 sec)         79         ISO 868           Thermal         Nominal Value         Unit         Test Method           Heat Deflection Temperature (66 psi, Unannealed)         421 °F         ISO 75-2/B           Heat Deflection Temperature (264 psi, Unannealed)         361 °F         ISO 75-2/A           Melting Temperature 2         437 °F         ISO 11357-3	Tensile Modulus	754000	psi	ISO 527-2/1A		
Flexural Modulus (73°F)	Tensile Stress (Break)	12500	psi	ISO 527-2/1A/5		
Flexural Stress (73°F)   20500   psi   ISO 178   Impact   Impact	Tensile Strain (Break)	4.4	%	ISO 527-2/1A/5		
Impact         Nominal Value         Unit         Test Method           Charpy Notched Impact Strength         ISO 179/1eA           -22°F         2.7 ft·lb/in²           73°F         5.1 ft·lb/in²           Charpy Unnotched Impact Strength         ISO 179/1eU           -22°F         18 ft·lb/in²           73°F         25 ft·lb/in²           Notched Izod Impact Strength (73°F)         5.6 ft·lb/in²           Nominal Value         Unit         Test Method           Shore Hardness (Shore D, 15 sec)         79         ISO 868           Thermal         Nominal Value         Unit         Test Method           Heat Deflection Temperature (66 psi, Unannealed)         421 °F         ISO 75-2/B           Heat Deflection Temperature (264 psi, Unannealed)         361 °F         ISO 75-2/A           Glass Transition Temperature 2         111 °F         ISO 11357-2           Melting Temperature 2         437 °F         ISO 11357-3	Flexural Modulus (73°F)	740000	psi	ISO 178		
Charpy Notched Impact Strength         ISO 179/1eA           -22°F         2.7 ft·lb/in²           73°F         5.1 ft·lb/in²           Charpy Unnotched Impact Strength         ISO 179/1eU           -22°F         18 ft·lb/in²           73°F         25 ft·lb/in²           Notched Izod Impact Strength (73°F)         5.6 ft·lb/in²           Nominal Value         Unit         Test Method           Shore Hardness (Shore D, 15 sec)         79         ISO 868           Thermal         Nominal Value         Unit         Test Method           Heat Deflection Temperature (66 psi, Unannealed)         421 °F         ISO 75-2/B           Heat Deflection Temperature (264 psi, Unannealed)         361 °F         ISO 75-2/A           Glass Transition Temperature 2         111 °F         ISO 11357-2           Melting Temperature 2         437 °F         ISO 11357-3	Flexural Stress (73°F)	20500	psi	ISO 178		
-22°F       2.7 ft·lb/in²         73°F       5.1 ft·lb/in²         Charpy Unnotched Impact Strength       ISO 179/1eU         -22°F       18 ft·lb/in²         73°F       25 ft·lb/in²         Notched Izod Impact Strength (73°F)       5.6 ft·lb/in²       ISO 180/1A         Hardness       Nominal Value       Unit       Test Method         Shore Hardness (Shore D, 15 sec)       79       ISO 868         Thermal       Nominal Value       Unit       Test Method         Heat Deflection Temperature (66 psi, Unannealed)       421 °F       ISO 75-2/B         Heat Deflection Temperature (264 psi, Unannealed)       361 °F       ISO 75-2/A         Glass Transition Temperature 2       111 °F       ISO 11357-2         Melting Temperature 2       437 °F       ISO 11357-3	Impact	Nominal Value	Unit	Test Method		
T3°F         5.1 ft·lb/in²           Charpy Unnotched Impact Strength         ISO 179/1eU           -22°F         18 ft·lb/in²           73°F         25 ft·lb/in²           Notched Izod Impact Strength (73°F)         5.6 ft·lb/in²           Hardness         Nominal Value         Unit         Test Method           Shore Hardness (Shore D, 15 sec)         79         ISO 868           Thermal         Nominal Value         Unit         Test Method           Heat Deflection Temperature (66 psi, Unannealed)         421 °F         ISO 75-2/B           Heat Deflection Temperature (264 psi, Unannealed)         361 °F         ISO 75-2/A           Glass Transition Temperature 2         111 °F         ISO 11357-2           Melting Temperature 2         437 °F         ISO 11357-3	Charpy Notched Impact Strength			ISO 179/1eA		
Charpy Unnotched Impact Strength -22°F 73°F 18 ft·lb/in² 73°F 25 ft·lb/in² Notched Izod Impact Strength (73°F)  Notched Izod Impact Strength (73°F)  Hardness Nominal Value Shore Hardness (Shore D, 15 sec)  Thermal Nominal Value Unit Test Method  Heat Deflection Temperature (66 psi, Unannealed) Heat Deflection Temperature (264 psi, Unannealed) Glass Transition Temperature 2  Melting Temperature 2  House It look in the look	-22°F	2.7	ft·lb/in²			
-22°F       18 ft·lb/in²         73°F       25 ft·lb/in²         Notched Izod Impact Strength (73°F)       5.6 ft·lb/in²       ISO 180/1A         Hardness       Nominal Value       Unit       Test Method         Shore Hardness (Shore D, 15 sec)       79       ISO 868         Thermal       Nominal Value       Unit       Test Method         Heat Deflection Temperature (66 psi, Unannealed)       421 °F       ISO 75-2/B         Heat Deflection Temperature (264 psi, Unannealed)       361 °F       ISO 75-2/A         Glass Transition Temperature 2       111 °F       ISO 11357-2         Melting Temperature 2       437 °F       ISO 11357-3	73°F	5.1	ft·lb/in²			
73°F         25 ft·lb/in²           Notched Izod Impact Strength (73°F)         5.6 ft·lb/in²         ISO 180/1A           Hardness         Nominal Value         Unit         Test Method           Shore Hardness (Shore D, 15 sec)         79         ISO 868           Thermal         Nominal Value         Unit         Test Method           Heat Deflection Temperature (66 psi, Unannealed)         421 °F         ISO 75-2/B           Heat Deflection Temperature (264 psi, Unannealed)         361 °F         ISO 75-2/A           Glass Transition Temperature 2         111 °F         ISO 11357-2           Melting Temperature 2         437 °F         ISO 11357-3	Charpy Unnotched Impact Strength			ISO 179/1eU		
Notched Izod Impact Strength (73°F)  Hardness  Nominal Value  Shore Hardness (Shore D, 15 sec)  Thermal  Heat Deflection Temperature (66 psi, Unannealed)  Heat Deflection Temperature (264 psi, Unannealed)  Glass Transition Temperature 2  Melting Temperature 2  150 180/1A  150 180/1A  150 180/1A  150 180/1A  150 868  150 868  160 150 150 868  170 150 868  170 150 75-2/B  170 150 75-2/B  170 150 11357-2  171 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-22°F	18	ft·lb/in²			
Hardness (Shore D, 15 sec)  Thermal Nominal Value Unit Test Method  Nominal Value Unit Test Method  Nominal Value Unit Test Method  Heat Deflection Temperature (66 psi, Unannealed)  Heat Deflection Temperature (264 psi, Unannealed)  Glass Transition Temperature 2  Melting Temperature 2  Nominal Value Unit Test Method  1 SO 75-2/B  1 ISO 75-2/B  1 ISO 75-2/A  1 ISO 11357-2  1 ISO 11357-3	73°F	25	ft·lb/in²			
Shore Hardness (Shore D, 15 sec)  Thermal  Nominal Value  Unit  Test Method  Heat Deflection Temperature (66 psi, Unannealed)  Heat Deflection Temperature (264 psi, Unannealed)  Glass Transition Temperature  Melting Temperature  111 °F  1SO 11357-2  1SO 11357-3	Notched Izod Impact Strength (73°F)	5.6	ft·lb/in²	ISO 180/1A		
ThermalNominal ValueUnitTest MethodHeat Deflection Temperature (66 psi, Unannealed)421 °FISO 75-2/BHeat Deflection Temperature (264 psi, Unannealed)361 °FISO 75-2/AGlass Transition Temperature 2111 °FISO 11357-2Melting Temperature 2437 °FISO 11357-3	Hardness	Nominal Value	Unit	Test Method		
Heat Deflection Temperature (66 psi, Unannealed)  Heat Deflection Temperature (264 psi, Unannealed)  Glass Transition Temperature 2  Melting Temperature 2  111 °F  1SO 75-2/B  1SO 75-2/B  1SO 75-2/A  111 °F  1SO 11357-2  1SO 11357-3	Shore Hardness (Shore D, 15 sec)	79		ISO 868		
Heat Deflection Temperature (264 psi, Unannealed)361 °FISO 75-2/AGlass Transition Temperature 2111 °FISO 11357-2Melting Temperature 2437 °FISO 11357-3	Thermal	Nominal Value	Unit	Test Method		
Glass Transition Temperature <sup>2</sup> Melting Temperature <sup>2</sup> 111 °F  ISO 11357-2  437 °F  ISO 11357-3	Heat Deflection Temperature (66 psi, Unannealed)	421	°F	ISO 75-2/B		
Melting Temperature <sup>2</sup> 437 °F ISO 11357-3	Heat Deflection Temperature (264 psi, Unannealed)	361	°F	ISO 75-2/A		
	Glass Transition Temperature <sup>2</sup>	111	°F	ISO 11357-2		
CLTE - Flow 2.0E-5 in/in/°F ISO 11359-2	Melting Temperature <sup>2</sup>	437	°F	ISO 11357-3		
	CLTE - Flow	2.0E-5	in/in/°F	ISO 11359-2		



#### Celanex® 4202

### Celanese Corporation - Polybutylene Terephthalate

Thermal	Nominal Value	Unit	Test Method
CLTE - Transverse	5.6E-5	in/in/°F	ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+17	ohms	IEC 60093
Volume Resistivity	2.0E+16	ohms·cm	IEC 60093
Electric Strength	560	V/mil	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	3.40		
1 MHz	3.20		
Dissipation Factor (1 MHz)	0.020		IEC 60250
Comparative Tracking Index	> 600	V	IEC 60112

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 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				

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

#### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.



<sup>&</sup>lt;sup>2</sup> 10°C/min