

# Celanex® 3200HR

# Celanese Corporation - Polybutylene Terephthalate

Monday, November 4, 2019

	General I	nformation		
Product Description				
Celanex 3200HR is a 15% glass processability.	filled polybutylene terephthalate which h	as an excellent hydrolysis resist	tance, mechanical properties and	
General				
Material Status	Commercial: Active			
Availability	Africa & Middle East	• Europe	North America	
	<ul> <li>Asia Pacific</li> </ul>	<ul> <li>Latin America</li> </ul>		
Filler / Reinforcement	<ul> <li>Glass Fiber, 15% Filler by</li> </ul>	Glass Fiber, 15% Filler by Weight		
Features	<ul> <li>Good Processability</li> </ul>	<ul> <li>Hydrolysis Resistant</li> </ul>		
RoHS Compliance	Contact Manufacturer			

Physical         Nominal Value         Unit           Density / Specific Gravity         1.41         9cm³           Density         1.41         gcm³           Molding Shrinkage - Flow         0.50 to 0.70         %           Water Absorption (Equilibrium, 73°F, 50% RH)         0.17         %           Mechanical         Nominal Value         Unit           Tensile Modulus         841000         psi           Tensile Stress (Break)         14500         psi           Tensile Strein (Break)         3.5         %           Flexural Modulus (73°F)         782000         psi           Flexural Stress (73°F)         21600         psi           Impact         Nominal Value         Unit           Charpy Notched Impact Strength         2.6         ft·lb/in²           -22°F         2.4         ft·lb/in²           73°F         9.5         ft·lb/in²           Notched Impact Strength         9.5         ft·lb/in²           Notched Izod Impact Strength (73°F)         2.5         ft·lb/in²           Unnotched Izod Impact Strength (73°F)         8.1         ft·lb/in²           Hardness         Nominal Value         Unit           Heat Deflection Temperature (66 psi, Unannealed)	ASTM & ISO Properties 1					
Density         1.41         g/cm³           Molding Shrinkage - Flow         0.50 to 0.70         %           Water Absorption (Equilibrium, 73°F, 50% RH)         0.17         %           Mechanical         Nominal Value         Unit           Tensile Modulus         841000         psi           Tensile Stress (Break)         14500         psi           Tensile Strain (Break)         3.5         %           Flexural Modulus (73°F)         782000         psi           Flexural Stress (73°F)         21600         psi           Impact         Nominal Value         Unit           Charpy Notched Impact Strength         2.6         ft-lb/in²           -22°F         2.4         ft-lb/in²           73°F         2.5         ft-lb/in²           Charpy Unnotched Impact Strength         9.5         ft-lb/in²           73°F         9.5         ft-lb/in²           Notched Izod Impact Strength (73°F)         2.5         ft-lb/in²           Unnotched Izod Impact Strength (73°F)         8.1         ft-lb/in²           Hardness         Nominal Value         Unit           Rockwell Hardness (M-Scale)         90         Thermal           Thermal         Nominal Value	Test Method					
Molding Shrinkage - Flow         0.50 to 0.70         %           Water Absorption (Equilibrium, 73°F, 50% RH)         0.17         %           Mechanical         Nominal Value         Unit           Tensile Modulus         841000         psi           Tensile Stress (Break)         14500         psi           Tensile Strain (Break)         3.5         %           Flexural Modulus (73°F)         782000         psi           Flexural Stress (73°F)         21600         psi           Impact         Nominal Value         Unit           Charpy Notched Impact Strength         2.4         ft-lb/in²           -22°F         2.4         ft-lb/in²           73°F         2.5         ft-lb/in²           Charpy Unnotched Impact Strength         9.5         ft-lb/in²           73°F         9.5         ft-lb/in²           Notched Izod Impact Strength (73°F)         2.5         ft-lb/in²           Unnotched Izod Impact Strength (73°F)         8.1         ft-lb/in²           Hardness         Nominal Value         Unit           Rockwell Hardness (M-Scale)         Nominal Value         Vinit           Thermal         Nominal Value         %F	ASTM D792					
Water Absorption (Equilibrium, 73°F, 50% RH)         0.17         %           Mechanical         Nominal Value         Unit           Tensile Modulus         841000         psi           Tensile Stress (Break)         14500         psi           Tensile Strain (Break)         3.5         %           Flexural Modulus (73°F)         782000         psi           Flexural Stress (73°F)         21600         psi           Impact         Nominal Value         Unit           Charpy Notched Impact Strength         2.4         ft·lb/in²           -22°F         2.4         ft·lb/in²           73°F         2.5         ft·lb/in²           Charpy Unnotched Impact Strength         9.5         ft·lb/in²           73°F         9.5         ft·lb/in²           Notched Izod Impact Strength (73°F)         2.5         ft·lb/in²           Unnotched Izod Impact Strength (73°F)         8.1         ft·lb/in²           Hardness         Nominal Value         Unit           Rockwell Hardness (M-Scale)         Nominal Value         Unit           Thermal         Nominal Value         Unit	ISO 1183					
Mechanical         Nominal Value         Unit           Tensile Modulus         841000         psi           Tensile Stress (Break)         14500         psi           Tensile Strain (Break)         3.5         %           Flexural Modulus (73°F)         782000         psi           Flexural Stress (73°F)         21600         psi           Impact         Nominal Value         Unit           Charpy Notched Impact Strength         2.4         ft·lb/in²           -22°F         2.4         ft·lb/in²           73°F         2.6         ft·lb/in²           Charpy Unnotched Impact Strength         9.5         ft·lb/in²           73°F         9.5         ft·lb/in²           Notched Izod Impact Strength (73°F)         2.5         ft·lb/in²           Unnotched Izod Impact Strength (73°F)         8.1         ft·lb/in²           Hardness         Nominal Value         Unit           Rockwell Hardness (M-Scale)         90           Thermal         Nominal Value         Unit           Heat Deflection Temperature (66 psi, Unannealed)         428         °F	ISO 294-4					
Tensile Modulus         841000         psi           Tensile Stress (Break)         14500         psi           Tensile Strain (Break)         3.5         %           Flexural Modulus (73°F)         782000         psi           Flexural Stress (73°F)         21600         psi           Impact         Nominal Value         Unit           Charpy Notched Impact Strength         2.4         ft·lb/in²           -22°F         2.4         ft·lb/in²           73°F         2.6         ft·lb/in²           Charpy Unnotched Impact Strength         9.5         ft·lb/in²           73°F         9.5         ft·lb/in²           Notched Izod Impact Strength (73°F)         2.5         ft·lb/in²           Unnotched Izod Impact Strength (73°F)         8.1         ft·lb/in²           Hardness         Nominal Value         Unit           Rockwell Hardness (M-Scale)         90         Thermal           Heat Deflection Temperature (66 psi, Unannealed)         428         °F	ISO 62					
Tensile Stress (Break)         14500         psi           Tensile Strain (Break)         3.5         %           Flexural Modulus (73°F)         782000         psi           Flexural Stress (73°F)         21600         psi           Impact         Nominal Value         Unit           Charpy Notched Impact Strength         2.4         ft·lb/in²           -22°F         2.6         ft·lb/in²           73°F         9.5         ft·lb/in²           Charpy Unnotched Impact Strength         9.5         ft·lb/in²           73°F         9.5         ft·lb/in²           Notched Izod Impact Strength (73°F)         2.5         ft·lb/in²           Unnotched Izod Impact Strength (73°F)         8.1         ft·lb/in²           Hardness         Nominal Value         Unit           Rockwell Hardness (M-Scale)         90         Thermal           Heat Deflection Temperature (66 psi, Unannealed)         428         °F	Test Method					
Tensile Strain (Break)         3.5 %           Flexural Modulus (73°F)         782000 psi           Flexural Stress (73°F)         21600 psi           Impact         Nominal Value Unit           Charpy Notched Impact Strength         2.4 ft·lb/in²           -22°F         2.4 ft·lb/in²           73°F         2.6 ft·lb/in²           Charpy Unnotched Impact Strength         9.5 ft·lb/in²           73°F         9.5 ft·lb/in²           Notched Izod Impact Strength (73°F)         2.5 ft·lb/in²           Unnotched Izod Impact Strength (73°F)         8.1 ft·lb/in²           Hardness         Nominal Value         Unit           Rockwell Hardness (M-Scale)         90           Thermal         Nominal Value         Unit           Heat Deflection Temperature (66 psi, Unannealed)         428 °F	ISO 527-2/1A/1					
Flexural Modulus (73°F)         782000         psi           Flexural Stress (73°F)         21600         psi           Impact         Nominal Value         Unit           Charpy Notched Impact Strength         2.4         ft·lb/in²           -22°F         2.4         ft·lb/in²           73°F         2.6         ft·lb/in²           Charpy Unnotched Impact Strength         9.5         ft·lb/in²           73°F         9.5         ft·lb/in²           Notched Izod Impact Strength (73°F)         2.5         ft·lb/in²           Unnotched Izod Impact Strength (73°F)         8.1         ft·lb/in²           Hardness         Nominal Value         Unit           Rockwell Hardness (M-Scale)         90         Thermal           Heat Deflection Temperature (66 psi, Unannealed)         428         °F	ISO 527-2/1A/5					
Flexural Stress (73°F)         21600         psi           Impact         Nominal Value         Unit           Charpy Notched Impact Strength         -22°F         2.4 ft·lb/in²           73°F         2.6 ft·lb/in²           Charpy Unnotched Impact Strength         -22°F         9.5 ft·lb/in²           73°F         9.5 ft·lb/in²           Notched Izod Impact Strength (73°F)         2.5 ft·lb/in²           Unnotched Izod Impact Strength (73°F)         8.1 ft·lb/in²           Hardness         Nominal Value         Unit           Rockwell Hardness (M-Scale)         90           Thermal         Nominal Value         Unit           Heat Deflection Temperature (66 psi, Unannealed)         428 °F	ISO 527-2/1A/5					
Impact         Nominal Value         Unit           Charpy Notched Impact Strength         2.2° F         2.4 ft·lb/in²           73°F         2.6 ft·lb/in²           Charpy Unnotched Impact Strength         9.5 ft·lb/in²           -22°F         9.5 ft·lb/in²           73°F         9.5 ft·lb/in²           Notched Izod Impact Strength (73°F)         2.5 ft·lb/in²           Unnotched Izod Impact Strength (73°F)         8.1 ft·lb/in²           Hardness         Nominal Value         Unit           Rockwell Hardness (M-Scale)         90           Thermal         Nominal Value         Unit           Heat Deflection Temperature (66 psi, Unannealed)         428 °F	ISO 178					
Charpy Notched Impact Strength         -22°F       2.4       ft·lb/in²         73°F       2.6       ft·lb/in²         Charpy Unnotched Impact Strength       9.5       ft·lb/in²         -22°F       9.5       ft·lb/in²         73°F       9.5       ft·lb/in²         Notched Izod Impact Strength (73°F)       2.5       ft·lb/in²         Unnotched Izod Impact Strength (73°F)       8.1       ft·lb/in²         Hardness       Nominal Value       Unit         Rockwell Hardness (M-Scale)       90         Thermal       Nominal Value       Unit         Heat Deflection Temperature (66 psi, Unannealed)       428       °F	ISO 178					
-22°F       2.4 ft·lb/in²         73°F       2.6 ft·lb/in²         Charpy Unnotched Impact Strength         -22°F       9.5 ft·lb/in²         73°F       9.5 ft·lb/in²         Notched Izod Impact Strength (73°F)       2.5 ft·lb/in²         Unnotched Izod Impact Strength (73°F)       8.1 ft·lb/in²         Hardness       Nominal Value       Unit         Rockwell Hardness (M-Scale)       90         Thermal       Nominal Value       Unit         Heat Deflection Temperature (66 psi, Unannealed)       428 °F	Test Method					
73°F       2.6 ft·lb/in²         Charpy Unnotched Impact Strength       -22°F       9.5 ft·lb/in²         73°F       9.5 ft·lb/in²       1.6 ft·lb/in²         Notched Izod Impact Strength (73°F)       2.5 ft·lb/in²         Unnotched Izod Impact Strength (73°F)       8.1 ft·lb/in²         Hardness       Nominal Value       Unit         Rockwell Hardness (M-Scale)       90         Thermal       Nominal Value       Unit         Heat Deflection Temperature (66 psi, Unannealed)       428 °F	ISO 179/1eA					
Charpy Unnotched Impact Strength         -22°F       9.5       ft·lb/in²         73°F       9.5       ft·lb/in²         Notched Izod Impact Strength (73°F)       2.5       ft·lb/in²         Unnotched Izod Impact Strength (73°F)       8.1       ft·lb/in²         Hardness       Nominal Value       Unit         Rockwell Hardness (M-Scale)       90         Thermal       Nominal Value       Unit         Heat Deflection Temperature (66 psi, Unannealed)       428       °F						
-22°F       9.5 ft·lb/in²         73°F       9.5 ft·lb/in²         Notched Izod Impact Strength (73°F)       2.5 ft·lb/in²         Unnotched Izod Impact Strength (73°F)       8.1 ft·lb/in²         Hardness       Nominal Value       Unit         Rockwell Hardness (M-Scale)       90         Thermal       Nominal Value       Unit         Heat Deflection Temperature (66 psi, Unannealed)       428 °F						
73°F       9.5 ft·lb/in²         Notched Izod Impact Strength (73°F)       2.5 ft·lb/in²         Unnotched Izod Impact Strength (73°F)       8.1 ft·lb/in²         Hardness       Nominal Value       Unit         Rockwell Hardness (M-Scale)       90         Thermal       Nominal Value       Unit         Heat Deflection Temperature (66 psi, Unannealed)       428 °F	ISO 179/1eU					
Notched Izod Impact Strength (73°F)  Unnotched Izod Impact Strength (73°F)  Hardness  Nominal Value  Rockwell Hardness (M-Scale)  Thermal  Nominal Value  Unit  Nominal Value  Unit  428 °F						
Unnotched Izod Impact Strength (73°F)  Hardness  Rockwell Hardness (M-Scale)  Thermal  Heat Deflection Temperature (66 psi, Unannealed)  8.1 ft-lb/in²  Nominal Value  Unit  Heat Deflection Temperature (66 psi, Unannealed)						
Hardness         Nominal Value         Unit           Rockwell Hardness (M-Scale)         90           Thermal         Nominal Value         Unit           Heat Deflection Temperature (66 psi, Unannealed)         428 °F	ISO 180/1A					
Rockwell Hardness (M-Scale)  Thermal  Nominal Value  Heat Deflection Temperature (66 psi, Unannealed)  428 °F	ISO 180/1U					
Thermal Nominal Value Unit  Heat Deflection Temperature (66 psi, Unannealed) 428 °F	Test Method					
Heat Deflection Temperature (66 psi, Unannealed) 428 °F	ISO 2039-2					
	Test Method					
H (D f) (1 T (1 (004 ) H (1 H ) )	ISO 75-2/B					
Heat Deflection Temperature (264 psi, Unannealed) 383 °F	ISO 75-2/A					
Heat Deflection Temperature (1160 psi, Unannealed) 194 °F	ISO 75-2/C					
Vicat Softening Temperature 428 °F	ISO 306/B50					
Peak Melting Temperature 437 °F	ASTM D3418					
Melting Temperature <sup>2</sup> 437 °F	ISO 11357-3					



### Celanex® 3200HR

## Celanese Corporation - Polybutylene Terephthalate

Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms·cm	IEC 60093
Electric Strength	740	V/mil	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	4.20		
1 MHz	3.80		
Dissipation Factor			IEC 60250
100 Hz	1.6E-3		
1 MHz	0.020		
Comparative Tracking Index	350	V	IEC 60112

Processing Information			
njection	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	

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

#### **Notes**



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

<sup>&</sup>lt;sup>2</sup> 10°C/min