Product Information

Ultradur® B 4300 G4 FC PBT (Polybutylene Terephthalate)



Product Description

Ultradur B 4300 G4 FC is a easy flowing injection molding food contact PBT with 20% glass fiber reinforcement for rigid, tough, and dimensionally stable parts.

Density, g/cm	PHYSICAL	ISO Test Method	Property Value
Mold Shrinkage, parallel, % 294-4 0.43 Mold Shrinkage, normal, % 294-4 1.16 Moisture, % 62 (50% RH) 0.2 (Saturation) 0.4 RHEOLOGICAL ISO Test Method Property Value Melt Volume Rate (250 C/2.16 Kg), cc/10min. 1133 14 MECHANICAL ISO Test Method Property Value Tensile Modulus, MPa 527 23C 7,000 Tensile stress at break, MPa 527 23C 115 Tensile strength, MPa 178 23C 3.5 Flexural Strength, MPa 178 23C 170 UMPACT ISO Test Method Property Value Charpy Notched, kJ/m² 179 23C 58 Charpy Unnotched, kJ/m² 179 23C 58 -30C 58 -30C 58 -30C 58 -30C 58 -30C <			
Mold Shrinkage, normal, % 294-4 1.16 Moisture, % 62 (50% RH) 0.2 (Saturation) 0.4 RHEOLOGICAL ISO Test Method Property Value Melt Volume Rate (250 C/2.16 Kg), cc/10min. 1133 14 MECHANICAL ISO Test Method Property Value Tensile Modulus, MPa 527 23C 23C 7,000 Tensile stress at break, MPa 527 23C 115 Tensile strain at break, % 527 23C 3.5 Tensile strain at break, % 527 23C 3.5 Tensile strain at break, % 527 23C 170 Tensile strain at break, % 52 23C 5 6 Charpy Notched, kJ/m² 170 Tensile st	Viscosity Number, cm/g	1628	107
Mold Shrinkage, normal, % 294-4 1.16 Moisture, % 62 (50% RH) 0.2 (Saturation) 0.4 RHEOLOGICAL ISO Test Method Property Value Melt Volume Rate (250 C/2.16 Kg), cc/10min. 1133 14 MECHANICAL ISO Test Method Property Value Tensile Modulus, MPa 527 23C 23C 7,000 Tensile stress at break, MPa 527 23C 115 Tensile strain at break, % 527 23C 3.5 Tensile strain at break, % 527 23C 3.5 Tensile strain at break, % 527 23C 170 Tensile strain at break, % 52 23C 5 6 Charpy Notched, kJ/m² 170 Tensile st	Mold Shrinkage, parallel, %	294-4	0.43
(50% RH)	Mold Shrinkage, normal, %	294-4	1.16
(Saturation) 0.4 RHEOLOGICAL ISO Test Method Property Value Melt Volume Rate (250 C/2.16 Kg), cc/10min. 1133 14 MECHANICAL ISO Test Method Property Value Tensile Modulus, MPa 527 23C 23C 7,000 7,000 Tensile stress at break, MPa 527 23C 115 Tensile strain at break, % 527 23C 3.5 Flexural Strength, MPa 178 23C 170 IMPACT ISO Test Method Property Value Charpy Notched, kJ/m² 179 23C 6 Charpy Unnotched, kJ/m² 179 23C 58 -30C 179 58 3.6 23C 58 3.0 54 THERMAL ISO Test Method Property Value Melting Point, C 3146 223 205 4DT A, C 75 220 HDT B, C 75 220 205 4DT A, C 75 220 LEC for of Linear Thermal Expansion, Paralle	Moisture, %	62	
RHEOLOGICAL ISO Test Method Property Value Melt Volume Rate (250 C/2.16 Kg), cc/10min. 1133 14 MECHANICAL ISO Test Method Property Value Tensile Modulus, MPa 527 7,000 23C 7,000 115 Tensile stress at break, MPa 527 115 23C 115 15 Flexural Strength, MPa 178 23C 23C 170 11MPACT IMPACT ISO Test Method Property Value Charpy Notched, kJ/m² 179 23C 23C 6 6 Charpy Unnotched, kJ/m² 179 23C -30C 58 54 THERMAL ISO Test Method Property Value Melting Point, C 3146 223 HDT B, C 75 205 HDT B, C 75 220 Coef. of Linear Thermal Expansion, Parallel, mm/mm C 0.35 X10-4 ELECTRICAL ISO Test Method Property Value Comparative Tracking Index <	(50% RH)		0.2
Melt Volume Rate (250 C/2.16 Kg), cc/10min. 1133 14 MECHANICAL ISO Test Method Property Value Tensile Modulus, MPa 527 23C 7,000 Tensile stress at break, MPa 527 23C 115 Tensile strain at break, % 527 23C 3.5 Flexural Strength, MPa 178 23C 170 IMPACT ISO Test Method Property Value Charpy Notched, kJ/m² 179 23C 6 6 Charpy Unnotched, kJ/m² 179 58 -30C 58 58 -30C 58 54 THERMAL ISO Test Method Property Value Melting Point, C 3146 223 HDT A, C 75 205 HDT B, C 75 220 Coef, of Linear Thermal Expansion, Parallel, mm/mm C 0.35 ×10-4 ELECTRICAL ISO Test Method Property Value Comparative Tracking Index IEC 60112 300	(Saturation)		0.4
MECHANICAL ISO Test Method Property Value Tensile Modulus, MPa 527 23C 7,000 Tensile stress at break, MPa 527 23C 115 Tensile strain at break, % 527 23C 3.5 Flexural Strength, MPa 178 23C 170 IMPACT ISO Test Method Property Value Charpy Notched, kJ/m² 179 23C 6 Charpy Unnotched, kJ/m² 179 23C 58 -30C 58 -30C 54 THERMAL ISO Test Method Property Value Melting Point, C 3146 223 HDT A, C 75 205 HDT B, C 75 220 Coef. of Linear Thermal Expansion, Parallel, mm/rm C 0.35 X10-4 ELECTRICAL ISO Test Method Property Value Comparative Tracking Index IEC 60112 300 Volume Resistivity IEC 60093 1E14 Surface	RHEOLOGICAL	ISO Test Method	Property Value
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23C 115 Tensile strain at break, % 527 23C 3.5 Flexural Strength, MPa 178 23C 170 MPACT ISO Test Method Property Value Charpy Notched, kJ/m² 179 23C 6 Charpy Unnotched, kJ/m² 179 23C 58 -30C 54 THERMAL ISO Test Method Property Value Melting Point, C 3146 223 HDT A, C 75 205 HDT B, C 75 220 Coef. of Linear Thermal Expansion, Parallel, mm/mm C 50 Test Method Property Value ELECTRICAL ISO Test Method Property Value Comparative Tracking Index IEC 60112 300 Volume Resistivity IEC 60093 1E14 Surface Resistivity IEC 60093 1E14 Dielectric Constant (100 Hz) IEC 60250 3.7 Dielectric Constant (1 MHz) IEC 60250 3.7	23C		7,000
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Flexural Strength, MPa	Tensile strain at break, %	527	
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HDT B, C Coef. of Linear Thermal Expansion, Parallel, mm/mm C ELECTRICAL ISO Test Method Property Value Comparative Tracking Index IEC 60112 300 Volume Resistivity IEC 60093 1E14 Surface Resistivity IEC 60093 1E13 Dielectric Constant (100 Hz) IEC 60250 3.7 Dielectric Constant (1 MHz) IEC 60250 3.7	IMPACT Charpy Notched, kJ/m² 23C Charpy Unnotched, kJ/m² 23C -30C	179 179	Property Value 6 58 54
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Surface ResistivityIEC 600931E13Dielectric Constant (100 Hz)IEC 602503.7Dielectric Constant (1 MHz)IEC 602503.7	IMPACT Charpy Notched, kJ/m² 23C Charpy Unnotched, kJ/m² 23C -30C THERMAL Melting Point, C HDT A, C HDT B, C Coef. of Linear Thermal Expansion, Parallel, mm/mm C	179 179 ISO Test Method 3146 75 75	Property Value 6 58 54 Property Value 223 205 220 0.35 X10-4
Dielectric Constant (100 Hz) IEC 60250 3.7 Dielectric Constant (1 MHz) IEC 60250 3.7	IMPACT Charpy Notched, kJ/m² 23C Charpy Unnotched, kJ/m² 23C -30C THERMAL Melting Point, C HDT A, C HDT B, C Coef. of Linear Thermal Expansion, Parallel, mm/mm C ELECTRICAL	179 179 ISO Test Method 3146 75 75	6 58 54 Property Value 223 205 220 0.35 X10-4 Property Value
Dielectric Constant (1 MHz) IEC 60250 3.7	Charpy Notched, kJ/m² 23C Charpy Unnotched, kJ/m² 23C -30C THERMAL Melting Point, C HDT A, C HDT B, C Coef. of Linear Thermal Expansion, Parallel, mm/mm C ELECTRICAL Comparative Tracking Index	179 179 ISO Test Method 3146 75 75 ISO Test Method IEC 60112	6 58 54 Property Value 223 205 220 0.35 X10-4 Property Value 300
	IMPACT Charpy Notched, kJ/m² 23C Charpy Unnotched, kJ/m² 23C -30C THERMAL Melting Point, C HDT A, C HDT B, C Coef. of Linear Thermal Expansion, Parallel, mm/mm C ELECTRICAL Comparative Tracking Index Volume Resistivity	179 179 ISO Test Method 3146 75 75 ISO Test Method IEC 60112 IEC 60093	6 58 54 Property Value 223 205 220 0.35 X10-4 Property Value 300 1E14
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Dissipation Factor (100 Hz) IEC 60250 12	IMPACT Charpy Notched, kJ/m² 23C Charpy Unnotched, kJ/m² 23C -30C THERMAL Melting Point, C HDT A, C HDT B, C Coef. of Linear Thermal Expansion, Parallel, mm/mm C ELECTRICAL Comparative Tracking Index Volume Resistivity Surface Resistivity Dielectric Constant (100 Hz)	179 179 180 Test Method 3146 75 75 ISO Test Method IEC 60112 IEC 60093 IEC 60093 IEC 60250	Property Value 6 58 54 Property Value 223 205 220 0.35 X10-4 Property Value 300 1E14 1E13 3.7



Dissipation Factor (1 MHz)



150

IEC 60250

Ultradur® B 4300 G4 FC



Processing Guidelines

Material Handling

Max. Water content: 0.04%

To ensure optimum part performance, this product must be dried prior to molding and maintained at a moisture level of less than 0.04%. Dehumidifying or desiccant dryers operating at 100-120 degC (212-248 degF) for 4 hours drying time are recommended. Further information concerning safe handling procedures can be obtained from the Material Safety Data Sheet. Alternatively, please contact your BASF representative.

Typical Profile

Melt Temperature 250-270 degC (482-518 degF) Mold Temperature 60-100 degC (140-212 degF) Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures

This product can be processed over mold temperatures of 60-100 degC (140-212 degF); however, for optimizing surface appearance, dimensional stability and part performance, mold surface temperatures of at least 80 degC (176 degF) are preferred.

Pressures

Injection pressure controls the filling of the part and should be applied for 90% of ram travel. Packing pressure affects the final part and can be used effectively in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

Back pressure can be utilized to provide uniform melt consistency and reduce trapped air and gas. A maximum of 10 bar (145 psi) is recommended due to the risk of excessive shear.

Fill Rate

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing. Surface appearance is directly affected by injection rate.



