Ultradur® B 4040 G10 BK05110

BASF Corporation - Polybutylene Terephthalate

Monday, November 4, 2019

General Information

Product Description

Ultradur B 4040 G10 BK05110 is a pigmented black, injection molding PBT with 50% glass fiber reinforced for technical parts with excellent surface finish.

Applications
Typical applications include automotive exterior, door handles, exterior mirror housings, rear screen, wiper arms.

General		
Material Status	• Commercial: Active	
Availability	• North America	
Filler / Reinforcement	• Glass Fiber, 50% Filler by Weight	
Features	• Good Surface Finish	
Uses	• Automotive Exterior Parts • Engineering Parts	• Handles • Housings
Agency Ratings	• EC 1907/2006 (REACH)	
RoHS Compliance	• RoHS Compliant	
Automotive Specifications	• FORD WRS-M4D582-B2	• GM GMP.PBT+PET.005 Color: Black
Appearance	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding	

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.73		ASTM D792
Density	1.73	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (275°C/2.16 kg)	6.00	cm³/10min	ISO 1133
Molding Shrinkage - Flow (0.125 in)	2.0E-3	in/in	
Water Absorption (Saturation)	0.40	%	ASTM D570
Water Absorption (Saturation, 73°F)	0.40	%	ISO 62
Water Absorption (Equilibrium, 50% RH)	0.12	%	ASTM D570
Water Absorption (Equilibrium, 73°F, 50% RH)	0.12	%	ISO 62
Viscosity Number (Reduced Viscosity)	97.0	ml/g	ISO 1628
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus (73°F)	2.39E+6	psi	ISO 527-2
Tensile Strength (Break, 73°F)	20300	psi	ASTM D638
Tensile Stress (Break, 73°F)	22500	psi	ISO 527-2
Tensile Elongation (Break, 73°F)	1.5	%	ASTM D638
Tensile Strain (Break, 73°F)	1.5	%	ISO 527-2
Flexural Modulus (73°F)	1.97E+6	psi	ASTM D790
Flexural Modulus (73°F)	2.18E+6	psi	ISO 178
Flexural Stress (73°F)	32600	psi	ISO 178

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Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179
-22°F	4.0	ft·lb/in²	
73°F	4.8	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179
-22°F	33	ft·lb/in²	
73°F	25	ft·lb/in²	
Notched Izod Impact			ASTM D256
-40°F	1.2	ft·lb/in	
73°F	1.4	ft·lb/in	
Notched Izod Impact Strength			ISO 180
-40°F	3.9	ft·lb/in²	
73°F	3.9	ft·lb/in²	

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	428	°F	ASTM D648
Heat Deflection Temperature (66 psi, Unannealed)	430	°F	ISO 75-2/B
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	419	°F	
Heat Deflection Temperature (264 psi, Unannealed)	401	°F	ISO 75-2/A
Peak Melting Temperature	433	°F	ASTM D3418
Melting Temperature (DSC)	433	°F	ISO 3146
CLTE - Flow	1.4E-5	in/in/°F	

Electrical	Nominal Value	Unit	Test Method
Surface Resistivity (0.0591 in)	1.0E+13	ohms	ASTM D257
Surface Resistivity	1.0E+13	ohms	IEC 60093
Volume Resistivity (0.0591 in)	> 1.0E+15	ohms·cm	ASTM D257
Volume Resistivity	> 1.0E+15	ohms·cm	IEC 60093
Dielectric Constant			IEC 60250
100 Hz	4.00		
1 MHz	4.00		
Dissipation Factor			IEC 60250
100 Hz	1.2E-3		
1 MHz	0.015		

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	212 to 248	°F
Drying Time	4.0	hr
Suggested Max Moisture	0.040	%
Processing (Melt) Temp	482 to 518	°F
Mold Temperature	140 to 212	°F
Injection Pressure	508 to 1810	psi
Injection Rate	Fast	
Back Pressure	< 145	psi

Notes

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