Ultradur® B 4520

BASF Corporation - Polybutylene Terephthalate

Monday, November 4, 2019

General Information

Product Description

Ultradur B 4520 is a medium viscosity, rapidly freezing injection molding grade.

Applications

Typical applications include chassis and housings for home appliances, office and sewing machines, and coil formers.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Features	• Medium Viscosity		
Uses	• Appliance Components	• Business Equipment	• Housings
Agency Ratings	• EC 1907/2006 (REACH)		
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• CHRYSLER MS-DB-400 CPN3942 Color: Non-matched Color • FORD WSB-M4D636-A2 • FORD WSS-M4D359-C1 • FORD WSS-M4D929-A2 • GM GMP.PBT.001 • GM QK 000489 Type A Color: Natural • PSA Peugeot-Citroën SPA X62 4136 Color: 00110 Black		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.30		ASTM D792
Density	1.30	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	19	cm³/10min	ISO 1133
Molding Shrinkage - Flow (0.125 in)	0.015	in/in	
Water Absorption (Saturation)	0.50	%	ASTM D570
Water Absorption (Saturation, 73°F)	0.50	%	ISO 62
Water Absorption (Equilibrium, 50% RH)	0.25	%	ASTM D570
Water Absorption (Equilibrium, 73°F, 50% RH)	0.25	%	ISO 62
Viscosity Number (Reduced Viscosity)	130.0	ml/g	ISO 1628
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus (73°F)	363000	psi	ISO 527-2
Tensile Strength (Yield, 73°F)	8700	psi	ASTM D638
Tensile Stress			ISO 527-2
Yield, -40°F	13600	psi	
Yield, 73°F	8700	psi	
Yield, 176°F	3190	psi	
Yield, 248°F	2610	psi	
Tensile Elongation (Yield, 73°F)	3.7	%	ASTM D638
Tensile Strain (Yield, 73°F)	3.7	%	ISO 527-2
Nominal Tensile Strain at Break (73°F)	> 50	%	ISO 527-2

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Mechanical	Nominal Value	Unit	Test Method
Tensile Creep Modulus (1 hr)	261000	psi	ISO 899-1
Tensile Creep Modulus (1000 hr)	174000	psi	ISO 899-1
Flexural Modulus (73°F)	334000	psi	ASTM D790
Flexural Modulus (73°F)	348000	psi	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength			ISO 179
-22°F	1.4	ft·lb/in²	
73°F	2.9	ft·lb/in²	
Charpy Unnotched Impact Strength (73°F)	No Break		ISO 179
Notched Izod Impact			ASTM D256
-40°F	0.69	ft·lb/in	
73°F	0.81	ft·lb/in	
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (66 psi, Unannealed)	325	°F	ASTM D648
Heat Deflection Temperature (66 psi, Unannealed)	329	°F	ISO 75-2/B
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	140	°F	
Heat Deflection Temperature (264 psi, Unannealed)	140	°F	ISO 75-2/A
Peak Melting Temperature	433	°F	ASTM D3418
Melting Temperature (DSC)	433	°F	ISO 3146
CLTE - Flow	8.1E-5	in/in/°F	
RTI Elec			UL 746
0.030 in	266	°F	
0.06 in	266	°F	
0.11 in	266	°F	
RTI Imp			UL 746
0.030 in	266	°F	
0.06 in	266	°F	
0.11 in	266	°F	
RTI Str			UL 746
0.030 in	284	°F	
0.06 in	284	°F	
0.11 in	284	°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	3.40		
1 MHz	3.30		
Dissipation Factor			IEC 60250
100 Hz	2.0E-3		
1 MHz	0.020		
Comparative Tracking Index	550	V	IEC 60112

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Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.030 in	HB		
0.06 in	HB		
0.11 in	HB		

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	104 to 176	°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.