

BASF Ultradur B 4500 PBT

Category : Polymer , Thermoplastic , Polyester, TP , Polybutylene Terephthalate (PBT) , Polybutylene Terephthalate (PBT), Unreinforced, Molded

Material Notes:

Ultradur B4500 is a general-purpose injection molding grade for high-precision, high-toughness, and dimensionally stable engineering parts. It conforms to FDA requirements of 21 CFR 177.1660.

Order this product through the following link:

http://www.lookpolymers.com/polymer_BASF-Ultradur-B-4500-PBT.php

Physical Properties	Metric	English	Comments
Density	1.30 g/cc	0.0470 lb/in ³	ISO 1183
Water Absorption	0.50 %	0.50 %	ISO 62
Moisture Absorption at Equilibrium	0.25 %	0.25 %	23°C/50% R.H.; ISO 62
Water Vapor Transmission	10.0 g/m ² /day	0.644 g/100 in ² /day	ASTM F 1249
Viscosity Test	130 cm ³ /g	130 cm ³ /g	Viscosity number
Linear Mold Shrinkage, Flow	0.015 cm/cm	0.015 in/in	Sheet
	0.016 cm/cm	0.016 in/in	60x60x2mm; ISO 294
Linear Mold Shrinkage, Transverse	0.015 cm/cm	0.015 in/in	Sheet
	0.019 cm/cm	0.019 in/in	60x60x2mm; ISO 294
Melt Flow	24.7 g/10 min	24.7 g/10 min	ISO 1133
	@Load 2.16 kg, Temperature 250 °C	@Load 4.76 lb, Temperature 482 °F	

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	130 MPa	18900 psi	ISO 2039-1
Tensile Strength, Yield	55.0 MPa	7980 psi	50mm/min; ISO 527-2
Elongation at Break	>= 50 %	>= 50 %	50mm/min; ISO 527-2
Elongation at Yield	3.7 %	3.7 %	50mm/min; ISO 527-2
Modulus of Elasticity	2.50 GPa	363 ksi	ISO 527-2
Flexural Strength	85.0 MPa	12300 psi	ISO 178
Charpy Impact Unnotched	29.0 J/cm ²	138 ft-lb/in ²	ISO 179/1eU
Charpy Impact, Notched	0.600 J/cm ²	2.86 ft-lb/in ²	ISO 179/1eA

Dart Drop, Total Energy Mechanical Properties	≥ 140 J Metric	≥ 103 ft-lb English	ISO 6603-1 Comments
Tensile Creep Modulus, 1000 hours	1200 MPa	174000 psi	elongation <0.5%, 23°C; ISO 899-1

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	13.0 - 16.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	7.22 - 8.89 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DIN 53752
	@Temperature 23.0 - 80.0 $^\circ\text{C}$	@Temperature 73.4 - 176 $^\circ\text{F}$	
Specific Heat Capacity	1.50 J/g- $^\circ\text{C}$	0.359 BTU/lb- $^\circ\text{F}$	IEC 1006
Thermal Conductivity	0.270 W/m-K	1.87 BTU-in/hr-ft 2 - $^\circ\text{F}$	DIN 52612
Melting Point	220 - 225 $^\circ\text{C}$	428 - 437 $^\circ\text{F}$	ISO 11357-3
Maximum Service Temperature, Air	120 $^\circ\text{C}$	248 $^\circ\text{F}$	at 50% loss of tensile strength after 20000h; IEC 216-1
	140 $^\circ\text{C}$	284 $^\circ\text{F}$	at 50% loss of tensile strength after 5000h; IEC 216-1
	200 $^\circ\text{C}$	392 $^\circ\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	165 $^\circ\text{C}$	329 $^\circ\text{F}$	ISO 75-2
Deflection Temperature at 1.8 MPa (264 psi)	65.0 $^\circ\text{C}$	149 $^\circ\text{F}$	ISO 75-2
Flammability, UL94	HB	HB	
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	HB	HB	
	@Thickness 0.800 mm	@Thickness 0.0315 in	

Optical Properties	Metric	English	Comments
Haze	1.0 %	1.0 %	ASTM D 1003

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	IEC 93
Surface Resistance	1.00e+13 ohm	1.00e+13 ohm	IEC 93
Dielectric Constant	3.3	3.3	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	3.3	3.3	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Electrical Properties	Metric /mm	English /in	Comments
Dissipation Factor	0.0010	0.0010	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.020	0.020	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Comparative Tracking Index	450 V	450 V	Test Liquid B; IEC 112
	550 V	550 V	Test Liquid A; IEC 112

Processing Properties	Metric	English	Comments
Melt Temperature	230 - 250 °C	446 - 482 °F	Semi-finished extrusion
	230 - 260 °C	446 - 500 °F	Pipe extrusion
	230 - 280 °C	446 - 536 °F	Cast-film extrusion
	230 - 280 °C	446 - 536 °F	Coating
	260 °C	500 °F	for shrinkage test
	250 - 275 °C	482 - 527 °F	Injection molding
Mold Temperature	40.0 - 70.0 °C	104 - 158 °F	
	60.0 °C	140 °F	for shrinkage test

Descriptive Properties	Value	Comments
Color	Natural	
Commercial Status	North America and Europe	
FDA	21 CFR 177.1660	
Form	Pellets	
Impact Modified	No	
Primary Processing Technique	Extrusion, Film Extrusion and Injection Molding	
Processing	Film Extrusion	
	Injection Molding	
	Other Extrusion	
	Profile Extrusion	

Descriptive Properties	Value	Comments
	stabilized or stable to heat	
	Light stabilized or stable to light	
	U.V. stabilized or stable to weather	

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