



Ultradur® B 4520 PRO TR

BASF Corporation - Polybutylene Terephthalate

Monday, November 4, 2019

General Information

Product Description

Ultradur B 4520 PRO TR is an unfilled injection molding PBT grade with special lubricant to minimize friction, stick-slip and squeaking, which supports customers in product development for the medical technology market. This grade complied with US Pharmacopoeia: Biological Reactivity Tests, USP Plastic Class VI (USP VI), ISO 10993-5: Biological Evaluation of Medical Devices Part 5: Test for Cytotoxicity, DMF: A Drug Master File (DMF) has been registered at FDA for Ultradur® PRO and Food Contact: Ultradur® PRO is in compliance with multiple regional food contact regulations, especially for Europe and United States.

General

Material Status	• Commercial: Active
Availability	• North America
Additive	• Lubricant
Features	• Food Contact Acceptable • Lubricated
Uses	• Medical/Healthcare Applications
Agency Ratings	• DMF Unspecified Rating • EU Food Contact, Unspecified Rating • ISO 10993 Part 5 • EC 1907/2006 (REACH) • FDA Food Contact, Unspecified Rating • USP Class VI
RoHS Compliance	• RoHS Compliant
Forms	• Pellets
Processing Method	• Injection Molding

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	1.30	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	20	cm ³ /10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow	2.3	%	
Flow	2.1	%	
Water Absorption (Saturation, 73°F)	0.50	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.25	%	ISO 62
Viscosity Number (Reduced Viscosity)	120.0	ml/g	ISO 1628
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (73°F)	363000	psi	ISO 527-2
Tensile Stress (Yield, 73°F)	7250	psi	ISO 527-2
Nominal Tensile Strain at Break (73°F)	28	%	ISO 527-2
Flexural Modulus (73°F)	348000	psi	ISO 178
Flexural Stress (73°F)	10200	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength			ISO 179
-22°F	81	ft-lb/in ²	
73°F	86	ft-lb/in ²	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (66 psi, Unannealed)	293	°F	ISO 75-2/B
Heat Deflection Temperature (264 psi, Unannealed)	136	°F	ISO 75-2/A
Melting Temperature (DSC)	428	°F	ISO 3146

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Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 5.0E+16	ohms	IEC 60093
Volume Resistivity	> 1.0E+18	ohms·cm	IEC 60093
Dielectric Constant			IEC 60250
100 Hz	3.30		
1 MHz	3.10		
Dissipation Factor			IEC 60250
100 Hz	2.1E-3		
1 MHz	0.020		
Comparative Tracking Index	600	V	IEC 60112

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.