

Ultradur® B 4500

Polybutylene Terephthalate

BASF Corporation

Message:

Medium-viscosity grade for the production of extruded cast films and thin-walled profiles and pipes.

General Information			
UL YellowCard	E41871-233794		
Features	Medium Viscosity		
Uses	Cast Film		
	Piping		
	Profiles		
Agency Ratings	EC 1907/2006 (REACH)		
RoHS Compliance	RoHS Compliant		
Appearance	Natural Color		
Forms	Pellets		
Processing Method	Cast Film		
	Injection Molding		
	Pipe Extrusion		
	Profile Extrusion		
Multi-Point Data	Creep Modulus vs. Time (ISO 11403-1)		
	Isochronous Stress vs. Strain (ISO 11403-1)		
	Isothermal Stress vs. Strain (ISO 11403-1)		
	Secant Modulus vs. Strain (ISO 11403-1)		
	Specific Volume vs Temperature (ISO 11403-2)		
	Viscosity vs. Shear Rate (ISO 11403-2)		
Resin ID (ISO 1043)	PBT		
Physical	Nominal Value	Unit	Test Method
Density	1.30	g/cm³	ISO 1183
Apparent Density	0.70 to 0.80	g/cm³	
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	21.0	cm³/10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow	1.9	%	
Flow	1.6	%	
Water Absorption			ISO 62
Saturation, 23°C	0.50	%	

Equilibrium, 23°C, 50% RH	0.25	%	
Viscosity Number ¹	130	cm ³ /g	ISO 307
Mold Shrinkage ²			
free, longitudinal	1.5	%	
free, transverse	1.5	%	
Maximum Service Temperature - short cycle operation	200	°C	
Temperature Index - at 50% loss of tensile strength			IEC 60216
-- ³	140	°C	
-- ⁴	120	°C	
Automotive Materials (> 1.00 mm)	Passed		FMVSS 302
ISO Type	PBT, E+F+MGHLN, 13-030		ISO 7792
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness (H 358/30)	130	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2500	MPa	ISO 527-2
Tensile Stress (Yield)	55.0	MPa	ISO 527-2/50
Tensile Strain (Yield)	3.7	%	ISO 527-2/50
Nominal Tensile Strain at Break	> 50	%	ISO 527-2/50
Tensile Creep Modulus ⁵ (1000 hr)	1200	MPa	ISO 899-1
Flexural Modulus	2300	MPa	ISO 178
Flexural Stress	85.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	4.0	kJ/m ²	
23°C	5.2	kJ/m ²	
Charpy Unnotched Impact Strength (23°C)	No Break		ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	165	°C	ISO 75-2/B
1.8 MPa, Unannealed	65.0	°C	ISO 75-2/A
Melting Temperature	223	°C	ISO 11357-3
CLTE - Flow (23 to 80°C)	1.3E-4 to 1.6E-4	cm/cm/°C	ISO 11359-2
Specific Heat	1500	J/kg/°C	
Thermal Conductivity	0.27	W/m/K	DIN 52612
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+13	ohms	IEC 60093
Volume Resistivity	1.0E+16	ohms · cm	IEC 60093
Relative Permittivity			IEC 60250
100 Hz	3.30		
1 MHz	3.30		
Dissipation Factor			IEC 60250

100 Hz	1.0E-3		
1 MHz	0.020		
Comparative Tracking Index			IEC 60112
Solution A	550	V	
Solution B	450	V	
Flammability	Nominal Value	Unit	Test Method
Flammability Classification			IEC 60695-11-10, -20
0.400 mm	HB		
1.60 mm	HB		
Injection	Nominal Value	Unit	
Processing (Melt) Temp	250 to 275	°C	
Mold Temperature	40.0 to 70.0	°C	
Extrusion	Nominal Value	Unit	
Melt Temperature	250 to 275	°C	
NOTE			
1.	solution 0,005 g/ml Phenole/1,2 Dichlorbenzol 1:1		
2.	plate with film gate 150*150*3 mm ³		
3.	5000 h		
4.	20000 h		
5.	strain <= 0,5%, 23°C		

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