

Ultradur® S 4090 G4

Polybutylene Terephthalate + ASA

BASF Corporation

Message:

Ultradur S 4090 G4 is a 20% glass reinforced PBT+ASA blend. It produces moldings with good surface finish, is resistant to chemicals and stress cracking, and has low shrinkage and warpage.

Applications

Applications include highly stressed equipment housings in the automotive, electrical and household sectors.

General Information			
UL YellowCard	E41871-233617		
Filler / Reinforcement	Glass Fiber, 20% Filler by Weight		
Features	Good Chemical Resistance		
	Good Surface Finish		
	High ESCR (Stress Crack Resist.)		
	Low Shrinkage		
	Low Warpage		
Uses	Automotive Applications		
	Electrical Housing		
	Household Goods		
	Housings		
Agency Ratings	EC 1907/2006 (REACH)		
RoHS Compliance	RoHS Compliant		
Forms	Pellets		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.39	g/cm ³	ASTM D792, ISO 1183
Melt Volume-Flow Rate (MVR) (275°C/2.16 kg)	20.0	cm ³ /10min	ISO 1133
Molding Shrinkage			
Flow : 3.18 mm	0.30	%	
Across Flow	0.74	%	ISO 294-4
Flow	0.43	%	ISO 294-4
Water Absorption			
Saturation	0.40	%	ASTM D570
Saturation, 23°C	0.40	%	ISO 62
Equilibrium, 50% RH	0.20	%	ASTM D570
Equilibrium, 23°C, 50% RH	0.20	%	ISO 62
Viscosity Number (Reduced Viscosity)	105.0	ml/g	ISO 1628

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	6900	MPa	ISO 527-2
Tensile Strength			
Break, 23°C	100	MPa	ASTM D638, ISO 527-2
Break, -40°C	160	MPa	ISO 527-2
Break, 80°C	68.0	MPa	ISO 527-2
Break, 121°C	42.0	MPa	ISO 527-2
Tensile Elongation (Break, 23°C)	2.5	%	ASTM D638, ISO 527-2
Tensile Creep Modulus			ISO 899-1
1 hr	5300	MPa	
1000 hr	4700	MPa	
Flexural Modulus			
23°C	6100	MPa	ASTM D790
23°C	6400	MPa	ISO 178
Flexural Strength (23°C)	159	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	7.0	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength			ISO 179
-30°C	43	kJ/m ²	
23°C	55	kJ/m ²	
Notched Izod Impact			
-40°C	68	J/m	ASTM D256
23°C	80	J/m	ASTM D256
23°C	7.0	kJ/m ²	ISO 180
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	216	°C	ASTM D648
0.45 MPa, Unannealed	205	°C	ISO 75-2/B
1.8 MPa, Unannealed	194	°C	ASTM D648
1.8 MPa, Unannealed	160	°C	ISO 75-2/A
Peak Melting Temperature	223	°C	ASTM D3418, ISO 3146
CLTE - Flow	4.0E-5	cm/cm/°C	
RTI Elec			UL 746
0.710 mm	130	°C	
1.50 mm	130	°C	
3.00 mm	130	°C	
RTI Imp			UL 746
0.710 mm	90.0	°C	
1.50 mm	90.0	°C	
3.00 mm	90.0	°C	
RTI Str			UL 746
0.710 mm	130	°C	

1.50 mm	130	°C	
3.00 mm	130	°C	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity ¹	1.0E+14	ohms	ASTM D257, IEC 60093
Volume Resistivity			
1.50 mm	> 1.0E+13	ohms·cm	ASTM D257
--	> 1.0E+13	ohms·cm	IEC 60093
Dielectric Constant			IEC 60250
100 Hz	3.70		
1 MHz	3.60		
Dissipation Factor			IEC 60250
100 Hz	3.0E-3		
1 MHz	0.019		
Comparative Tracking Index	450	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.710 mm	HB		
1.50 mm	HB		
3.00 mm	HB		
Injection	Nominal Value	Unit	
Drying Temperature	100 to 120	°C	
Drying Time	4.0	hr	
Suggested Max Moisture	0.040	%	
Processing (Melt) Temp	250 to 270	°C	
Mold Temperature	60.0 to 100	°C	
Injection Pressure	3.50 to 12.5	MPa	
Injection Rate	Fast		
Back Pressure	< 1.00	MPa	
NOTE			
1.	1.5 mm		

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