

ULTEM™ 1010 resin

Polyether Imide

SABIC Innovative Plastics

Message:

ULTEM™ 1010 resin is an amorphous, transparent polyetherimide (PEI) plastic offering enhanced flow and a glass transition temperature (Tg) of 217°C. This inherently flame retardant resin has UL94 V0 and 5VA ratings. For Healthcare applications which require biocompatibility we recommend ULTEM™ HU1010 resin as an alternative. For US FDA and EU Food Contact compliance, please select 1010F resin. ULTEM™ 1010 resin is an unreinforced general purpose grade offering high heat resistance, high strength and modulus and broad chemical resistance up to high temperatures.

General Information			
Features	High strength		
	Good liquidity		
	Good chemical resistance		
	Heat resistance, high		
	General		
	amorphous		
	Flame retardancy		
Uses	General		
RoHS Compliance	RoHS compliance		
Appearance	Clear/transparent		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Density	1.27	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR)			ISO 1133
340°C/5.0 kg	13.0	cm ³ /10min	ISO 1133
360°C/5.0 kg	25.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow ¹	0.50 - 0.70	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	1.3	%	ISO 62
Equilibrium, 23°C, 50% RH	0.70	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness (H 358/30)	140	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	3200	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50
Yield	105	MPa	ISO 527-2/50
Fracture	85.0	MPa	ISO 527-2/50
Tensile Strain			ISO 527-2/50
Yield	6.0	%	ISO 527-2/50
Fracture	60	%	ISO 527-2/50

Flexural Modulus ²	3300	MPa	ISO 178
Flexural Stress	160	MPa	ISO 178
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	10.0	mg	Internal method
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact ³			ISO 180/1A
-30°C	5.0	kJ/m ²	ISO 180/1A
23°C	5.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength ⁴			ISO 180/1U
-30°C	No Break		ISO 180/1U
23°C	No Break		ISO 180/1U
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature ⁵			
0.45 MPa, unannealed, 100 mm span	200	°C	ISO 75-2/Be
1.8 MPa, unannealed, 100 mm span	190	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	215	°C	ISO 306/A50
--	211	°C	ISO 306/B50
--	212	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
Linear thermal expansion coefficient			ISO 11359-2
Flow: 23 to 150°C	5.0E-5	cm/cm/°C	ISO 11359-2
Horizontal: 23 to 150°C	5.0E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.21	W/m/K	ISO 8302
RTI Elec	170	°C	UL 746
RTI Imp	170	°C	UL 746
RTI	170	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	1.0E+15	ohms · cm	IEC 60093
Dielectric Strength			IEC 60243-1
0.800mm, in oil	33	kV/mm	IEC 60243-1
1.60mm, in oil	25	kV/mm	IEC 60243-1
3.20mm, in oil	16	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
50 Hz	2.90		IEC 60250
60 Hz	2.90		IEC 60250
1 MHz	2.90		IEC 60250
Dissipation Factor			IEC 60250
50 Hz	5.0E-4		IEC 60250
60 Hz	5.0E-4		IEC 60250
1 MHz	6.0E-3		IEC 60250

2.45 GHz	2.5E-3		IEC 60250
Comparative Tracking Index			IEC 60112
--	150	V	IEC 60112
Solution B	100	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm	V-0		UL 94
3.00 mm	5VA		UL 94
Glow Wire Flammability Index (3.20 mm)	960	°C	IEC 60695-2-12
Oxygen Index	47	%	ISO 4589-2
Injection	Nominal Value	Unit	
Drying Temperature	150	°C	
Drying Time	4.0 - 6.0	hr	
Suggested Max Moisture	0.020	%	
Hopper Temperature	80.0 - 120	°C	
Rear Temperature	340 - 395	°C	
Middle Temperature	350 - 405	°C	
Front Temperature	360 - 415	°C	
Nozzle Temperature	350 - 405	°C	
Processing (Melt) Temp	370 - 410	°C	
Mold Temperature	140 - 180	°C	
NOTE			
1.	Tensile Bar		
2.	2.0 mm/min		
3.	80*10*4		
4.	80*10*4		
5.	120*10*4 mm		

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