

ULTEM™ HU1010 resin

Polyether Imide

SABIC Innovative Plastics

Message:

Transparent, enhanced flow Polyetherimide (Tg 217C). ECO Conforming. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI), food contact compliant. EtO and steam sterilizable.

General Information			
Features	Comply with ECO		
	Ethylene oxide disinfection		
	High liquidity		
	Biocompatibility		
	Compliance of Food Exposure		
	Disinfect with steam		
Uses	Drug		
	Medical/nursing supplies		
Agency Ratings	EU Eco		
	ISO 10993		
	USP Class VI		
Appearance	Clear/transparent		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.27	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (337°C/6.6 kg)	18	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (220°C/5.0 kg)	25.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	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
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	3580	MPa	ASTM D638
--	3200	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	110	MPa	ASTM D638
Yield	105	MPa	ISO 527-2/5
Fracture ³	105	MPa	ASTM D638

Fracture	85.0	MPa	ISO 527-2/5
Tensile Elongation			
Yield ⁴	7.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/5
Fracture ⁵	60	%	ASTM D638
Fracture	60	%	ISO 527-2/5
Flexural Modulus			
50.0mm span ⁶	3420	MPa	ASTM D790
100mm span ⁷	3520	MPa	ASTM D790
-- ⁸	3300	MPa	ISO 178
Flexural Stress			
--	160	MPa	ISO 178
Yield, 50.0mm span ⁹	174	MPa	ASTM D790
Yield, 100mm span ¹⁰	165	MPa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	10.0	mg	ASTM D1044
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ¹¹ (23°C)	3.0	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	35	J/m	ASTM D256
23°C	32	J/m	ASTM D256
-30°C ¹²	5.0	kJ/m ²	ISO 180/1A
23°C ¹³	5.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact (23°C)	1300	J/m	ASTM D4812
Instrumented Dart Impact (23°C, Total Energy)	33.0	J	ASTM D3763
Dart Drop Impact (23°C)	33.9	J	ASTM D3029
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
1.8 MPa, unannealed, 6.40mm	199	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹⁴	193	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	219	°C	ASTM D1525 ¹⁵
--	211	°C	ISO 306/B50
--	212	°C	ISO 306/B120
Linear thermal expansion coefficient			
Flow: -20 to 150°C	5.6E-5	cm/cm/°C	ASTM E831
Flow: -40 to 40°C	5.0E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	5.0E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	1.0E+17	ohms · cm	ASTM D257
Dielectric Strength			ASTM D149
1.60 mm, in Air	33	kV/mm	ASTM D149

1.60 mm, in Oil	28	kV/mm	ASTM D149
Dielectric Constant (1 kHz)	3.15		ASTM D150
Dissipation Factor			ASTM D150
1 kHz	1.3E-3		ASTM D150
2.45 GHz	2.5E-3		ASTM D150
Arc Resistance ¹⁶	PLC 5		ASTM D495
Comparative Tracking Index (CTI)	PLC 4		UL 746
High Amp Arc Ignition (HAI)	PLC 3		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 2		UL 746
Hot-wire Ignition (HWI)	PLC 1		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
	V-2		
0.711 mm	V-0		UL 94
3.00 mm	5VA		UL 94
Oxygen Index	44	%	ASTM D2863
Injection	Nominal Value	Unit	
Drying Temperature	149	°C	
Drying Time	4.0 - 6.0	hr	
Drying Time, Maximum	24	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 - 60	%	
Rear Temperature	332 - 399	°C	
Middle Temperature	338 - 399	°C	
Front Temperature	343 - 399	°C	
Nozzle Temperature	343 - 399	°C	
Processing (Melt) Temp	349 - 399	°C	
Mold Temperature	135 - 163	°C	
Back Pressure	0.345 - 0.689	MPa	
Screw Speed	40 - 70	rpm	
Vent Depth	0.025 - 0.076	mm	
NOTE			
1.	5.0 mm/min		
2.	Type 1, 5.0 mm/min		
3.	Type 1, 5.0 mm/min		
4.	Type 1, 5.0 mm/min		
5.	Type 1, 5.0 mm/min		
6.	1.3 mm/min		
7.	2.6 mm/min		
8.	2.0 mm/min		

9.	1.3 mm/min
10.	2.6 mm/min
11.	80*10*4 sp=62mm
12.	80*10*4
13.	80*10*4
14.	80*10*4 mm
15.	标准 B (120°C/h), 载荷2 (50N)
16.	Tungsten electrode

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