

ULTEM™ 1010P resin

Polyether Imide
SABIC Innovative Plastics

Message:
Enhanced flow Polyetherimide (Tg 217C) in 350 micron powder. ECO Conforming.

General Information			
Features	ECO Compliant		
	Good Flow		
Agency Ratings	EU Eco		
Forms	Powder		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.27	g/cm³	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) (340°C/5.0 kg)	13.0	cm³/10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70	%	Internal Method
Water Absorption			
24 hr	0.25	%	ASTM D570
Saturation, 23°C	1.3	%	ISO 62
Equilibrium, 23°C	1.3	%	ASTM D570
Equilibrium, 23°C, 50% RH	0.70	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	109		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	3590	MPa	ASTM D638
--	3200	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	110	MPa	ASTM D638
Yield	105	MPa	ISO 527-2/5
Break ³	110	MPa	ASTM D638
Break	85.0	MPa	ISO 527-2/5
Tensile Elongation			
Yield ⁴	7.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/5
Break ⁵	60	%	ASTM D638
Break	60	%	ISO 527-2/5

Flexural Modulus			
50.0 mm Span ⁶	3500	MPa	ASTM D790
-- ⁷	3300	MPa	ISO 178
Flexural Stress			
--	160	MPa	ISO 178
Yield, 100 mm Span ⁸	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 ⁹ (23°C)	5.0	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	30	J/m	ASTM D256
23°C	32	J/m	ASTM D256
-30°C ¹⁰	No Break		ISO 180/1A
23°C ¹¹	No Break		ISO 180/1A
Unnotched Izod Impact (23°C)	1300	J/m	ASTM D4812
Reverse Notch Izod Impact (3.20 mm)	1200	J/m	ASTM D256
Instrumented Dart Impact (23°C, Total Energy)	38.0	J	ASTM D3763
Gardner Impact (23°C)	33.9	J	ASTM D3029
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 6.40 mm	207	°C	ASTM D648
1.8 MPa, Unannealed, 3.20 mm	190	°C	ASTM D648
1.8 MPa, Unannealed, 6.40 mm	198	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹²	190	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	211	°C	ASTM D1525, ISO 306/B50 ¹³
--	212	°C	ISO 306/B120
Ball Pressure Test (75°C)	Pass		IEC 60695-10-2
CLTE			
Flow : -20 to 150°C	5.5E-5	cm/cm/°C	ASTM E831
Flow : -40 to 40°C	5.5E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 40°C	5.5E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Thermal Conductivity	0.22	W/m/K	ASTM C177
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	
1.60 mm, in Oil	28	kV/mm	
Dielectric Constant (1 kHz)	3.15		ASTM D150
Dissipation Factor			ASTM D150

1 kHz	1.3E-3		
2.45 GHz	2.5E-3		
Flammability	Nominal Value	Unit	Test Method
Oxygen Index	44	%	ASTM D2863
Injection	Nominal Value	Unit	
Drying Temperature	149	°C	
Drying Time	4.0 to 6.0	hr	
Drying Time, Maximum	24	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 to 60	%	
Rear Temperature	332 to 399	°C	
Middle Temperature	338 to 399	°C	
Front Temperature	343 to 399	°C	
Nozzle Temperature	343 to 399	°C	
Processing (Melt) Temp	349 to 399	°C	
Mold Temperature	135 to 163	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	40 to 70	rpm	
Vent Depth	0.025 to 0.076	mm	
NOTE			
1.	5.0 mm/min		
2.	Type I, 5.0 mm/min		
3.	Type I, 5.0 mm/min		
4.	Type I, 5.0 mm/min		
5.	Type I, 5.0 mm/min		
6.	1.3 mm/min		
7.	2.0 mm/min		
8.	2.6 mm/min		
9.	80*10*4 sp=62mm		
10.	80*10*4		
11.	80*10*4		
12.	80*10*4 mm		
13.	Rate B (120°C/h), Loading 2 (50 N)		

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