

ULTEM™ CRS5011R resin

Polyether Imide

SABIC Innovative Plastics

Message:

Enhanced flow Polyetherimide copolymer (Tg 225C) with internal mold release and enhanced chemical resistance to strong acids, bases, aromatics and ketones. ECO Conforming.

General Information			
Additive	Mold Release		
Features	Acid Resistant		
	Base Resistant		
	ECO Compliant		
	Good Chemical Resistance		
	Good Flow		
Agency Ratings	EU Eco		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.28	g/cm³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (337°C/6.6 kg)	11	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (360°C/5.0 kg)	20.0	cm³/10min	ISO 1133
Molding Shrinkage			Internal Method
Flow ¹	0.40 to 0.70	%	
Flow : 3.20 mm	0.40 to 0.70	%	
Across Flow : 3.20 mm	0.40 to 0.70	%	
Water Absorption			ISO 62
Saturation, 23°C	1.2	%	
Equilibrium, 23°C, 50% RH	0.20	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ²	2900	MPa	ASTM D638
--	2900	MPa	ISO 527-2/1
Tensile Strength			
Yield ³	100	MPa	ASTM D638
Yield	100	MPa	ISO 527-2/5
Break ⁴	75.0	MPa	ASTM D638
Break	85.0	MPa	ISO 527-2/5
Tensile Elongation			
Yield ⁵	8.0	%	ASTM D638
Yield	8.0	%	ISO 527-2/5

Break ⁶	60	%	ASTM D638
Break	50	%	ISO 527-2/5
Flexural Modulus			
50.0 mm Span ⁷	3100	MPa	ASTM D790
-- ⁸	2900	MPa	ISO 178
Flexural Stress			
--	110	MPa	ISO 178
Yield, 50.0 mm Span ⁹	138	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ¹⁰			ISO 179/1eA
-30°C	7.0	kJ/m ²	
23°C	7.0	kJ/m ²	
Charpy Unnotched Impact Strength ¹¹			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
23°C	59	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	2100	J/m	ASTM D4812
-30°C ¹⁴	No Break		ISO 180/1U
23°C ¹⁵	No Break		ISO 180/1U
Reverse Notch Izod Impact (3.20 mm)	2100	J/m	ASTM D256
Instrumented Dart Impact (23°C, Total Energy)	30.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	213	°C	ASTM D648
0.45 MPa, Unannealed, 6.40 mm	216	°C	ASTM D648
0.45 MPa, Unannealed, 100 mm Span ¹⁶	210	°C	ISO 75-2/Be
0.45 MPa, Unannealed, 64.0 mm Span ¹⁷	208	°C	ISO 75-2/Bf
1.8 MPa, Unannealed, 3.20 mm	201	°C	ASTM D648
1.8 MPa, Unannealed, 6.40 mm	204	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹⁸	200	°C	ISO 75-2/Ae
1.8 MPa, Unannealed, 64.0 mm Span ¹⁹	198	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	227	°C	ASTM D1525 ²⁰
--	220	°C	ISO 306/A50
--	215	°C	ISO 306/B50, ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE			

Flow : -40 to 150°C	5.5E-5	cm/cm/°C	ASTM E831
Flow : 23 to 150°C	5.5E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 150°C	5.5E-5	cm/cm/°C	ASTM E831
Transverse : 23 to 150°C	5.5E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.31	W/m/K	ASTM C177
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	2.5E+15	ohms·cm	IEC 60093
Dielectric Strength (3.20 mm, in Oil)	18	kV/mm	ASTM D149, IEC 60243-1
Dielectric Constant			ASTM D150
50 Hz	3.20		
60 Hz	3.20		
Dissipation Factor			ASTM D150, IEC 60250
50 Hz	2.1E-3		
60 Hz	2.1E-3		
Comparative Tracking Index			IEC 60112
--	150	V	
Solution B	100	V	
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	343 to 366	°C	
Middle Temperature	354 to 377	°C	
Front Temperature	366 to 388	°C	
Nozzle Temperature	360 to 382	°C	
Processing (Melt) Temp	366 to 388	°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.	Tensile Bar		
2.	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.	Type I, 5.0 mm/min		
7.	1.3 mm/min		
8.	2.0 mm/min		

9.	1.3 mm/min
10.	80*10*4 sp=62mm
11.	80*10*4 sp=62mm
12.	80*10*4
13.	80*10*4
14.	80*10*4
15.	80*10*4
16.	120*10*4 mm
17.	80*10*4 mm
18.	120*10*4 mm
19.	80*10*4 mm
20.	Rate B (120°C/h), Loading 2 (50 N)

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