

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. Resin is RoHS compliant.

General Information			
Additive	demoulding		
Features	Copolymer		
	Good chemical resistance		
	alkali resistance		
	acid resistance		
RoHS Compliance	RoHS compliance		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.28	g/cm ³	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	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal method
Flow ¹	0.40 - 0.70	%	Internal method
Flow: 3.20mm	0.40 - 0.70	%	Internal method
Transverse flow: 3.20mm	0.40 - 0.70	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	1.2	%	ISO 62
Equilibrium, 23°C, 50% RH	0.20	%	ISO 62
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
Fracture ⁴	75.0	MPa	ASTM D638
Fracture	85.0	MPa	ISO 527-2/5
Tensile Elongation			
Yield ⁵	8.0	%	ASTM D638
Yield	8.0	%	ISO 527-2/5
Fracture ⁶	60	%	ASTM D638

Fracture	50	%	ISO 527-2/5
Flexural Modulus			
50.0mm span ⁷	3100	MPa	ASTM D790
-- ⁸	2900	MPa	ISO 178
Flexural Stress			
--	110	MPa	ISO 178
Yield, 50.0mm 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	ISO 179/1eA
23°C	7.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength ¹¹			ISO 179/1eU
-30°C	No Break		ISO 179/1eU
23°C	No Break		ISO 179/1eU
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, 3.20mm	213	°C	ASTM D648
0.45 MPa, unannealed, 6.40mm	216	°C	ASTM D648
0.45 MPa, unannealed, 100 mm span ¹⁶	210	°C	ISO 75-2/Be
0.45 MPa, unannealed, 64.0mm span ¹⁷	208	°C	ISO 75-2/Bf
1.8 MPa, unannealed, 3.20mm	201	°C	ASTM D648
1.8 MPa, unannealed, 6.40mm	204	°C	ASTM D648
1.8 MPa, unannealed, 100 mm span ¹⁸	200	°C	ISO 75-2/Ae
1.8 MPa, unannealed, 64.0mm 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
Linear thermal expansion coefficient			
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
Lateral: -40 to 150°C	5.5E-5	cm/cm/°C	ASTM E831
Horizontal: 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
3.20mm, in oil	18	kV/mm	IEC 60243-1
Dielectric Constant			ASTM D150
50 Hz	3.20		ASTM D150
60 Hz	3.20		ASTM D150
Dissipation Factor			ASTM D150, IEC 60250
50 Hz	2.1E-3		ASTM D150, IEC 60250
60 Hz	2.1E-3		ASTM D150, IEC 60250
Comparative Tracking Index			IEC 60112
--	150	V	IEC 60112
Solution B	100	V	IEC 60112
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	343 - 366	°C	
Middle Temperature	354 - 377	°C	
Front Temperature	366 - 388	°C	
Nozzle Temperature	360 - 382	°C	
Processing (Melt) Temp	366 - 388	°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.	Tensile Bar		
2.	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.	Type 1, 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.	标准 B (120°C/h), 载荷2 (50N)

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