

ULTEM™ 9090 resin

Polyether Imide

SABIC Innovative Plastics

Message:

Polyetherimide Blend with improved Ductility and Detergent resistance. Meets FAR 25.853 and OSU 55/55 heat release and provides low toxicity, smoke and flame evolution.

General Information			
Features	Low smoke		
	Low toxicity		
	Detergent resistance		
	ductility		
Agency Ratings	FAR 25.853		
	OSU 55/55		
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)	10	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (360°C/5.0 kg)	14.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.70	%	Internal method
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ¹	2900	MPa	ASTM D638
Tensile Strength			
Yield ²	95.0	MPa	ASTM D638
Yield	97.0	MPa	ISO 527-2/50
Fracture ³	90.0	MPa	ASTM D638
Fracture	80.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	7.0	%	ASTM D638
Yield	7.0	%	ISO 527-2/50
Fracture ⁵	85	%	ASTM D638
Fracture	80	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	3000	MPa	ASTM D790
-- ⁷	2800	MPa	ISO 178
Flexural Stress			
--	136	MPa	ISO 178

Yield, 50.0mm span ⁸	140	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	11	kJ/m ²	ISO 179/2C
Notched Izod Impact			
23°C	70	J/m	ASTM D256
-30°C ⁹	6.0	kJ/m ²	ISO 180/1A
23°C ¹⁰	6.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength ¹¹			ISO 180/1U
-30°C	No Break		ISO 180/1U
23°C	No Break		ISO 180/1U
Reverse Notch Izod Impact (3.20 mm)	3300	J/m	ASTM D256
Instrumented Dart Impact			ASTM D3763
-20°C, Total Energy	88.0	J	ASTM D3763
0°C, Total Energy	99.0	J	ASTM D3763
23°C, Total Energy	88.0	J	ASTM D3763
Instrumented Impact, Ductility			ASTM D3763
-20°C	90	%	ASTM D3763
0°C	100	%	ASTM D3763
23°C	100	%	ASTM D3763
NBS Smoke Density - Flaming, Ds, 4 min	0.700		ASTM E662
OSU peak heat release rate ¹²	45.0	kW/m ²	FAR 25.853
OSU total heat release ¹³	15.0	kW · min/m ²	FAR 25.853
Vertical Burn Test - Test a (60 s), passes at	1.0	sec	FAR 25.853
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 6.40mm	214	°C	ASTM D648
0.45 MPa, unannealed, 100 mm span ¹⁴	205	°C	ISO 75-2/Be
1.8 MPa, unannealed, 6.40mm	204	°C	ASTM D648
1.8 MPa, unannealed, 100 mm span ¹⁵	190	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	219	°C	ISO 306/A50
--	212	°C	ISO 306/B50, ISO 306/B120
Linear thermal expansion coefficient			
Flow: -20 to 150°C	5.6E-5	cm/cm/°C	ASTM E831
Flow: 23 to 150°C	5.0E-5	cm/cm/°C	ISO 11359-2
Lateral: -20 to 150°C	5.5E-5	cm/cm/°C	ASTM E831
Horizontal: 23 to 150°C	5.0E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.19	W/m/K	ASTM C177
Flammability	Nominal Value	Unit	Test Method
Oxygen Index	46	%	ASTM D2863
Injection	Nominal Value	Unit	
Drying Temperature	150	°C	

Drying Time	6.0 - 8.0	hr
Drying Time, Maximum	24	hr
Suggested Max Moisture	0.020	%
Suggested Shot Size	40 - 60	%
Rear Temperature	330 - 390	°C
Middle Temperature	335 - 390	°C
Front Temperature	345 - 390	°C
Nozzle Temperature	345 - 390	°C
Processing (Melt) Temp	355 - 390	°C
Mold Temperature	130 - 160	°C
Back Pressure	0.300 - 0.700	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.	2.0 mm/min
8.	1.3 mm/min
9.	80*10*4
10.	80*10*4
11.	80*10*4
12.	5 minute test
13.	2 minute test
14.	120*10*4 mm
15.	120*10*4 mm

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