

ULTEM™ AUT210 resin

Polyether Imide

SABIC Innovative Plastics

Message:

Transparent, Thermoplastic Polyimide (TPI). Glass transition Temperature (Tg) of 227degC. Haze onset temperature of 212degC (SABIC IP method). Very low outgassing and plateout, for automotive lighting applications where highly metallized, reflective surfaces are required. Resin is a Dual-use item and is subject to export control restrictions under both U.S. 15 CFR , 774 and Annex I of Reg. (EC) 428/2009 as ECN 1C008. Diversion contrary to law is prohibited.

General Information			
Features	Low to No Outgassing		
Uses	Automotive Applications		
Appearance	Clear/Transparent		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.29	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)	16.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70	%	Internal Method
Water Absorption			ISO 62
Saturation, 23°C	1.0	%	
Equilibrium, 23°C, 50% RH	0.20	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	3590	MPa	ASTM D638
--	3320	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	105	MPa	ASTM D638
Yield	103	MPa	ISO 527-2/5
Break ³	88.0	MPa	ASTM D638
Break	88.0	MPa	ISO 527-2/5
Tensile Elongation			
Yield ⁴	8.0	%	ASTM D638
Yield	7.0	%	ISO 527-2/5
Break ⁵	75	%	ASTM D638
Break	54	%	ISO 527-2/5
Flexural Modulus			
50.0 mm Span ⁶	3330	MPa	ASTM D790
-- ⁷	3140	MPa	ISO 178
Flexural Strength ⁸ (Yield, 50.0 mm Span)	170	MPa	ASTM D790

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	16	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	38	J/m	ASTM D256
23°C	37	J/m	ASTM D256
-30°C ¹⁰	4.0	kJ/m ²	ISO 180/1A
23°C ¹¹	5.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	2400	J/m	ASTM D4812
-30°C ¹²	No Break		ISO 180/1U
23°C ¹³	No Break		ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	33.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	215	°C	ASTM D648
1.8 MPa, Unannealed, 3.20 mm	201	°C	ASTM D648
1.8 MPa, Unannealed, 6.40 mm	211	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹⁴	196	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	222	°C	ASTM D1525 ¹⁵
--	221	°C	ISO 306/B50
CLTE			
Flow : -40 to 150°C	5.0E-5	cm/cm/°C	ASTM E831
Flow : 23 to 150°C	5.0E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 150°C	5.0E-5	cm/cm/°C	ASTM E831
Transverse : 23 to 150°C	5.0E-5	cm/cm/°C	ISO 11359-2
Additional Information	Nominal Value	Unit	Test Method
Metallized Haze Onset	212	°C	Internal Method
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	360 to 382	°C	
Middle Temperature	371 to 393	°C	
Front Temperature	382 to 404	°C	
Nozzle Temperature	377 to 399	°C	
Processing (Melt) Temp	382 to 404	°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.	1.3 mm/min	
9.	80*10*4 sp=62mm	
10.	80*10*4	
11.	80*10*4	
12.	80*10*4	
13.	80*10*4	
14.	120*10*4 mm	
15.	Rate B (120°C/h), Loading 2 (50 N)	

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