

## ULTEM\* 1010 Resin

SABIC Innovative Plastics - *Polyether Imide*

### Actions

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#### General Information

##### Product Description

Transparent, enhanced flow Polyetherimide (Tg 217C). ECO Conforming, UL94 V0 and 5VA listing. US FDA and EU Food Contact compliant, NSF 51 listing. Effective June 2007, this grade will no longer be supported with biocompatibility information and should not be used for medical applications which require biocompatibility. Alternative grade HU1010.

##### General

Material Status	Commercial: Active			
Availability	North America			
Features	ECO Compliant	Food Contact Acceptable		Good Flow
Agency Ratings	EU Eco		FDA Food Contact, Unspecified Rating	
	EU Food Contact, Unspecified Rating		NSF 51	
Appearance	Clear/Transparent			
Forms	Pellets			

Processing Method

Injection Molding

Multi-Point Data

Coefficient of Thermal Expansion vs. Temperature (ASTM E831)

ASTM and ISO Properties <sup>1</sup>

**Physical**

[Specific Gravity](#)

Nominal Value Unit

Test Method

1.27

ASTM D792

[Melt Mass-Flow Rate \(MFR\)](#) (337°C/6.6 kg)

18 g/10 min

ASTM D1238

[Molding Shrinkage](#) - Flow (0.126 in)

0.0050 to 0.0070 in/in

ASTM D955

[Water Absorption](#) (24 hr)

0.25 %

ASTM D570

[Water Absorption](#) (Equilibrium, 73°F)

1.3 %

ASTM D570

**Mechanical**

Nominal Value Unit

Test Method

[Tensile Modulus](#) <sup>2</sup>

520000 psi

ASTM D638

[Tensile Strength](#) <sup>3</sup> (Yield)

16000 psi

ASTM D638

[Tensile Elongation](#) <sup>3</sup> (Yield)

7.0 %

ASTM D638

[Tensile Elongation](#) <sup>3</sup> (Break)

60 %

ASTM D638

[Flexural Modulus](#) <sup>4</sup> (3.94 in Span)

510000 psi

ASTM D790

[Flexural Strength](#) <sup>4</sup> (Yield, 3.94 in Span)

24000 psi

ASTM D790

[Taber Abrasion Resistance](#) (1000 Cycles, 1000 g, CS-17 Wheel)

10.0 mg

ASTM D1044

**Impact**

Nominal Value Unit

Test Method

[Notched Izod Impact](#) (73°F)

0.600 ft-lb/in

ASTM D256

[Unnotched Izod Impact](#) (73°F)

25.0 ft-lb/in

ASTM D4812

[Reverse Notch Izod Impact](#) (0.126 in)

22 ft-lb/in

ASTM D256

[Gardner Impact](#) (73°F)

300 in-lb

ASTM D3029

**Hardness**[Rockwell Hardness](#) (M-Scale)**Thermal**[Deflection Temperature Under Load](#) (66 psi, Unannealed, 0.252 in)[Deflection Temperature Under Load](#) (264 psi, Unannealed, 0.252 in)[Vicat Softening Temperature](#)[CLTE](#) - Flow (-4 to 302°F)[Thermal Conductivity](#)**Electrical**[Volume Resistivity](#)[Dielectric Strength](#)

0.0630 in, in Air

0.0630 in, in Oil

[Dielectric Constant](#) (1000 Hz)[Dissipation Factor](#)

1000 Hz

2E+9 Hz

[Arc Resistance \(PLC\)](#)<sup>6</sup>**Flammability**[Oxygen Index](#)**UL 746**[RTI Str](#)[RTI Imp](#)[RTI Elec](#)

Nominal Value Unit	Test Method
109	ASTM D785
Nominal Value Unit	Test Method
405 °F	ASTM D648
390 °F	ASTM D648
426 °F	ASTM D1525 <sup>5</sup>
0.000031 in/in/°F	ASTM E831
1.5 Btu-in/hr/ft <sup>2</sup> /°F	ASTM C177
Nominal Value Unit	Test Method
1.0E+17 ohm-cm	ASTM D257
	ASTM D149
830 V/mil	
710 V/mil	
3.150	ASTM D150
	ASTM D150
0.0013	
0.0025	
PLC 5	ASTM D495
Nominal Value Unit	Test Method
44 %	ASTM D2863
Nominal Value Unit	Test Method
338 °F	UL 746
338 °F	UL 746
338 °F	UL 746

[Comparative Tracking Index \(CTI\) \(PLC\)](#)

PLC 4

UL 746

[High Voltage Arc Tracking Rate \(HVTR\) \(PLC\)](#)

PLC 2

UL 746

[Hot-wire Ignition \(HWI\) \(PLC\)](#)

PLC 1

UL 746

[High Amp Arc Ignition \(HAI\) \(PLC\)](#)

PLC 3

UL 746

**Additional Information**

Nominal Value Unit

Test Method

NBS Smoke Density (Flaming, Ds, 4 min)

2.000

ASTM E662

Processing Information

**Injection**

Nominal Value Unit

Drying Temperature

300 °F

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

630 to 750 °F

Middle Temperature

640 to 750 °F

Front Temperature

650 to 750 °F

Nozzle Temperature

650 to 750 °F

Processing (Melt) Temp

660 to 750 °F

Mold Temperature

275 to 325 °F

Back Pressure

50.0 to 100.0 psi

Screw Speed

40 to 70 rpm

Vent Depth

0.0010 to 0.0030 in

Notes

<sup>1</sup>Typical properties: these are not to be construed as specifications.

<sup>2</sup>0.20 in/min

<sup>3</sup>Type I, 0.20 in/min

<sup>4</sup>0.10 in/min

<sup>5</sup>Rate B (120°C/h), Loading 2 (50 N)

<sup>6</sup>Tungsten Electrode

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