

ULTEM™ Resin 1000 - Europe

Polyether Imide
SABIC

PROSPECTOR®

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Technical Data

Product Description

ULTEM 1000 resin is an amorphous, transparent polyetherimide (PEI) plastic offering a glass transition temperature (Tg) of 217°C. This inherently flame retardant resin has UL94 V0, V2 and 5VA ratings and is RoHS compliant. ULTEM 1000 resin is an unreinforced general purpose grade offering high heat resistance, high strength and modulus and broad chemical resistance up to high temperatures.

General

Material Status	• Commercial: Active
Search for UL Yellow Card	• SABIC • ULTEM™ Resin
Availability	• Europe
Features	• Amorphous • Chemical Resistant • Flame Retardant • General Purpose • High Heat Resistance • High Strength
Uses	• Additive Manufacturing (3D Printing) • Aerospace Applications • Appliances • Automotive Applications • Automotive Exterior Parts • Automotive Interior Parts • Automotive Lighting • Automotive Under the Hood • Construction Applications • Electrical/Electronic Applications • Electronic Displays • Fluid Handling • Industrial Applications • Lawn and Garden Equipment • Lenses • Lighting Applications • Medical/Healthcare Applications • Non-specific Food Applications • Oil/Gas Applications • Outdoor Applications • Pharmaceuticals • Rail Applications
RoHS Compliance	• RoHS Compliant
Appearance	• Clear/Transparent
Processing Method	• Injection Molding
Also Available In	• Asia Pacific • Latin America • North America

Physical	Nominal Value Unit	Test Method
Density	1.27 g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (360°C/5.0 kg)	13.0 cm ³ /10min	ISO 1133
Molding Shrinkage - Flow ²	0.50 to 0.70 %	Internal Method
Water Absorption		ISO 62
Saturation, 23°C	1.3 %	
Equilibrium, 23°C, 50% RH	0.70 %	

Mechanical	Nominal Value Unit	Test Method
Tensile Modulus	3200 MPa	ISO 527-2/1
Tensile Stress		ISO 527-2/50
Yield	105 MPa	
Break	85.0 MPa	
Tensile Strain		ISO 527-2/50
Yield	6.0 %	
Break	60 %	
Flexural Modulus ³	3300 MPa	ISO 178
Flexural Stress ^{3,4}	160 MPa	ISO 178
Taber Abrasion Resistance		Internal Method
1000 Cycles, 1000 g, CS-17 Wheel	10.0 mg	



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Impact	Nominal Value Unit	Test Method
Charpy Notched Impact Strength		
-30°C ⁵	4.0 kJ/m ²	ISO 179/1eA
23°C ⁵	4.0 kJ/m ²	ISO 179/1eA
23°C	10 kJ/m ²	ISO 179/2C
Notched Izod Impact Strength ⁶		ISO 180/1A
-30°C	6.0 kJ/m ²	
23°C	6.0 kJ/m ²	
Unnotched Izod Impact Strength ⁶		ISO 180/1U
-30°C	No Break	
23°C	No Break	
Hardness	Nominal Value Unit	Test Method
Ball Indentation Hardness (H 358/30)	140 MPa	ISO 2039-1
Thermal	Nominal Value Unit	Test Method
Heat Deflection Temperature ⁷		
0.45 MPa, Unannealed, 4.00 mm, 100 mm Span	200 °C	ISO 75-2/Be
1.8 MPa, Unannealed, 4.00 mm, 100 mm Span	190 °C	ISO 75-2/Ae
Vicat Softening Temperature		
--	215 °C	ISO 306/A50
--	211 °C	ISO 306/B50
--	212 °C	ISO 306/B120
Ball Pressure Test (123 to 127°C)	Pass	IEC 60695-10-2
CLTE		ISO 11359-2
Flow : 23 to 150°C	5.0E-5 cm/cm/°C	
Transverse : 23 to 150°C	5.0E-5 cm/cm/°C	
Thermal Conductivity	0.24 W/m/K	ISO 8302
RTI Elec	170 °C	UL 746
RTI Imp	170 °C	UL 746
RTI Str	170 °C	UL 746
Electrical	Nominal Value Unit	Test Method
Surface Resistivity	> 1.0E+15 ohms	IEC 60093
Volume Resistivity	1.0E+15 ohms·cm	IEC 60093
Electric Strength		IEC 60243-1
0.800 mm, in Oil	33 kV/mm	
1.60 mm, in Oil	25 kV/mm	
3.20 mm, in Oil	16 kV/mm	
Relative Permittivity		IEC 60250
50 Hz	2.90	
60 Hz	2.90	
1 MHz	2.90	
Dissipation Factor		IEC 60250
50 Hz	5.0E-4	
60 Hz	5.0E-4	
1 MHz	6.0E-3	
2.45 GHz	2.5E-3	
Comparative Tracking Index		IEC 60112
--	150 V	
Solution B	100 V	



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Flammability	Nominal Value Unit	Test Method
Flame Rating		UL 94
0.40 mm	V-2	
0.75 mm	V-0	
3.0 mm	5VA	
Glow Wire Flammability Index (3.2 mm)	960 °C	IEC 60695-2-12
Oxygen Index	47 %	ISO 4589-2

Injection	Nominal Value Unit
Drying Temperature	150 °C
Drying Time	4.0 to 6.0 hr
Suggested Max Moisture	0.020 %
Hopper Temperature	80 to 120 °C
Rear Temperature	340 to 395 °C
Middle Temperature	350 to 405 °C
Front Temperature	360 to 415 °C
Nozzle Temperature	350 to 405 °C
Processing (Melt) Temp	370 to 410 °C
Mold Temperature	140 to 180 °C

Notes

¹ Typical properties: these are not to be construed as specifications.

² Tensile Bar

³ 2.0 mm/min

⁴ at Yield

⁵ 80*10*4 sp=62mm

⁶ 80*10*4 mm

⁷ 120*10*4 mm



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Where to Buy

Supplier

SABIC

Web: <http://www.sabic.com/>

Distributor

Erteco Rubber & Plastics AB

Telephone: +46-8-587-517-00

Web: <http://www.erteco.se/>

Availability: Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway, Sweden

POLY MIX

Telephone: +33-3-8920-1380

Web: <http://www.polymix.eu/>

Availability: France

RESINEX Group

RESINEX is a Pan European distribution company. Contact RESINEX for availability of individual products by country.

Telephone: +32-14-672511

Web: <http://www.resinex.com/>

Availability: Europe

Ultrapolymers

Ultrapolymers is a Pan European distribution company. Contact Ultrapolymers for availability of individual products by country.

Telephone: +32-11-57-95-57

Web: <http://www.ultrapolymers.com/>

Availability: Belgium, Netherlands, South Africa

