

**Product Texts**

ULTEM 2310EPR resin is a further improved flow 30% glass fiber reinforced polyetherimide resin with an added internal mold release. The material is RoHS compliant and is intrinsically flame retardant without the use of FR modifiers and offers UL94 V0 and 5VA ratings. The material may offer excellent dimension stability, strength, stiffness and creep resistance up to high temperature due to its high glass transition temperature of 217°C. Beside enhanced flow the material offers enhanced metal adhesion in Electroplated applications. The material is opaque.

Processing/Physical Characteristics	Value	Unit	Test Standard
<b>ISO Data</b>			
Melt volume-flow rate, MVR	12	cm <sup>3</sup> /10min	ISO 1133
Temperature	360	°C	-
Load	5	kg	-
<b>ASTM Data</b>			
Melt Flow Index, MFI	11	g/10min	ASTM D 1238
Temperature	337	°C	-
Load	6.6	kg	-

Mechanical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Tensile Modulus	8970	MPa	ISO 527
Yield stress	160	MPa	ISO 527
Yield strain	2	%	ISO 527
Stress at break	160	MPa	ISO 527
Strain at break	2	%	ISO 527
Flexural modulus	9500	MPa	ISO 178
Charpy impact strength, +23°C	30	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	35	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, +23°C	10	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	10	kJ/m <sup>2</sup>	ISO 179/1eA
Izod impact strength, +23°C	35	kJ/m <sup>2</sup>	ISO 180/1U
Izod impact strength, +23°C, 4mm	35	kJ/m <sup>2</sup>	ISO 180/1U
Izod impact strength, -30°C, 4mm	35	kJ/m <sup>2</sup>	ISO 180/1U
Izod notched impact strength, +23°C, 4mm	10	kJ/m <sup>2</sup>	ISO 180/1A
Izod notched impact strength, -30°C, 4mm	10	kJ/m <sup>2</sup>	ISO 180/1A
Izod notched impact strength, +23°C	10	kJ/m <sup>2</sup>	ISO 180/1A
Izod notched impact strength	10	kJ/m <sup>2</sup>	ISO 180/1A
Temperature	-30	°C	-
Ball indentation hardness	160	MPa	ISO 2039-1
<b>ASTM Data</b>			
Tensile Modulus	8580	MPa	ASTM D 638
Tensile Strength at Yield	158	MPa	ASTM D 638
Tensile Strength at Break	158	MPa	ASTM D 638
Elongation at Yield	2.1	%	ASTM D 638
Elongation at Break	2.1	%	ASTM D 638
Flexural Modulus	9140	MPa	ASTM D 790
Izod Impact notched, 1/8 in	85	J/m	ASTM D 256
Izod Impact unnotched, 1/8 in	450	J/m	ASTM D 256

Thermal properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Temp. of deflection under load, 1.80 MPa	196	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	207	°C	ISO 75-1/-2
Vicat softening temperature, B	212	°C	ISO 306
Vicat softening temperature, 120°C/h 50N	214	°C	ISO 306
Coeff. of linear therm. expansion, parallel	18	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	30	E-6/K	ISO 11359-1/-2
Burning behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.4	mm	-
Thermal Conductivity	0.31	W/(m K)	DIN 52616

**ASTM Data**

Coefficient of Thermal Expansion, MD	<b>18</b>	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	<b>30</b>	E-6/K	ASTM D 696
DTUL @ 66 psi	<b>205</b>	°C	ASTM D 648
DTUL @ 264 psi	<b>201</b>	°C	ASTM D 648
Vicat Temperature	<b>217</b>	°C	ASTM D 1525

<b>Other properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Water absorption	<b>0.9</b>	%	Sim. to ISO 62
Humidity absorption	<b>0.5</b>	%	Sim. to ISO 62
Density	<b>1480</b>	kg/m <sup>3</sup>	ISO 1183
Density	<b>1480</b>	kg/m <sup>3</sup>	ASTM D 792

<b>Processing Recommendation Injection Molding</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Pre-drying - Temperature	<b>150</b>	°C	-
Pre-drying - Time	<b>4 - 6</b>	h	-
Processing humidity	<b>≤0.02</b>	%	-
Melt temperature	<b>350 - 400</b>	°C	-
Mold temperature	<b>135 - 165</b>	°C	-
Zone 1	<b>330 - 400</b>	°C	-
Zone 2	<b>340 - 400</b>	°C	-
Zone 3	<b>345 - 400</b>	°C	-
Screw speed	<b>40 - 70</b>	rpm	-
Back pressure	<b>0.3 - 0.7</b>	MPa	-

**Characteristics**

**Processing**

Injection Molding

**Additives**

Release agent

**Special Characteristics**

Flame retardant, Halogen-free, Platable, Heat stabilized or stable to heat, Opaque

**Features**

Amorphous, Creep Resistance, Good Adhesion, Low Smoke

**Chemical Resistance**

General Chemical Resistance, Hydrolytically Stable

**Certifications**

RoHS compliant

**Applications**

Electrical and Electronical, General Purpose

**Regional Availability**

North America, Europe, Asia Pacific, South and Central America