

Product Texts

ULTEM HU2310 resin is an improved flow, 30% glass fiber reinforced polyetherimide resin. The intended use for this material is in medical devices and pharmaceutical applications. The material offers biocompatibility (ISO 10993 or USP Class VI) and Healthcare management of change applies. The material may offer Steam-, Hydrogen Peroxide-, Gamma-, EtO-, UV-C- and E-beam resistance for repeated sterilization cycles. It may offer global food compliance (FDA, CN, EC). The material is RoHS compliant and is intrinsically flame retardant without the use of FR modifiers. It offers UL94 V0 and 5VA ratings. The material can also offer excellent dimension stability, strength, stiffness and creep resistance up to high temperature due to its high glass transition temperature of 217°C. The material is opaque and can be custom colored.

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	8	cm ³ /10min	ISO 1133
Temperature	360	°C	-
Load	5	kg	-
ASTM Data			
Melt Flow Index, MFI	7.6	g/10min	ASTM D 1238
Temperature	337	°C	-
Load	6.6	kg	-

Mechanical properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	10500	MPa	ISO 527
Stress at break	175	MPa	ISO 527
Strain at break	2.4	%	ISO 527
Flexural modulus, 23°C	9600	MPa	ISO 178
Charpy impact strength, +23°C	40	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	40	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	10	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	10	kJ/m ²	ISO 179/1eA
Izod impact strength, +23°C	40	kJ/m ²	ISO 180/1U
Izod notched impact strength, +23°C, 4mm	10	kJ/m ²	ISO 180/1A
Izod notched impact strength, -30°C, 4mm	10	kJ/m ²	ISO 180/1A
Izod notched impact strength, +23°C	10	kJ/m ²	ISO 180/1A
Izod notched impact strength	10	kJ/m ²	ISO 180/1A
Temperature	-30	°C	-
Rockwell hardness	M 110	-	ISO 2039-2
Ball indentation hardness	165	MPa	ISO 2039-1
ASTM Data			
Tensile Modulus	10400	MPa	ASTM D 638
Tensile Strength at Break	175	MPa	ASTM D 638
Elongation at Break	2.5	%	ASTM D 638
Flexural Modulus	9700	MPa	ASTM D 790
Rockwell Hardness	M 114	-	ASTM D 785
Izod Impact notched, 1/8 in	90	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	80	J/m	ASTM D 256
Temperature	-30	°C	-
Izod Impact unnotched, 1/8 in	600	J/m	ASTM D 256

Thermal properties	Value	Unit	Test Standard
ISO Data			
Temp. of deflection under load, 1.80 MPa	210	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	215	°C	ISO 75-1/-2
Vicat softening temperature, A	225	°C	ISO 306
Vicat softening temperature, B	213	°C	ISO 306
Vicat softening temperature, 120°C/h 50N	220	°C	ISO 306
Coeff. of linear therm. expansion, parallel	17	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	49	E-6/K	ISO 11359-1/-2
Burning behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.2	mm	-
Yellow Card available	yes	-	-

ULTEM™ Resin HU2310

PEI-GF30

Saudi Basic Industries Corporation (SABIC)

Burning behav. 5V at thickness h	5VA	class	IEC 60695-11-20
Thickness tested	1.2	mm	-
Yellow Card available	yes	-	-
Oxygen index	48	%	ISO 4589-1/-2
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI - thickness tested (1)	2	mm	-
Glow Wire Ignition Temperature (GWIT)	900	°C	IEC 60695-2-13
GWIT - thickness tested (1)	2	mm	-
ASTM Data			
Coefficient of Thermal Expansion, MD	19	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	41	E-6/K	ASTM D 696
DTUL @ 66 psi	215	°C	ASTM D 648
DTUL @ 264 psi	211	°C	ASTM D 648
Vicat Temperature	227	°C	ASTM D 1525
Limiting Oxygen Index	50	%	ASTM D 2863

Electrical properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	3.4	-	IEC 62631-2-1
Dissipation factor, 1MHz	25	E-4	IEC 62631-2-1
Volume resistivity	1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Electric strength	35	kV/mm	IEC 60243-1
Comparative tracking index	150	-	IEC 60112
ASTM Data			
Dielectric Strength, Short Time	24.8	kV/mm	ASTM D 149
Volume Resistivity	3E16	Ohm*cm	ASTM D 257
Arc Resistance	90	s	ASTM D 495

Other properties	Value	Unit	Test Standard
Water absorption	0.9	%	Sim. to ISO 62
Humidity absorption	0.5	%	Sim. to ISO 62
Density	1510	kg/m ³	ISO 1183
Water Absorption, 24hr	0.16	%	ASTM D 570
Water Absorption, Equilibrium	0.9	%	ASTM D 570
Density	1510	kg/m ³	ASTM D 792

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	150	°C	-
Pre-drying - Time	4 - 6	h	-
Processing humidity	≤0.02	%	-
Melt temperature	350 - 410	°C	-
Mold temperature	135 - 180	°C	-
Feed temperature	80 - 120	°C	-
Zone 1	330 - 400	°C	-
Zone 2	340 - 410	°C	-
Zone 3	345 - 420	°C	-
Screw speed	40 - 70	rpm	-
Back pressure	0.3 - 1.5	MPa	-

Characteristics**Processing**

Injection Molding, Profile Extrusion, Sheet Extrusion, Other Extrusion

Certifications

Food contact, Food approval FDA 21 CFR, Medical Grade, Biocompatibility ISO 10993, US Pharmacopeia Class VI Approved, RoHS compliant

Special Characteristics

Flame retardant, Halogen-free, U.V. stabilized or stable to weather, Heat stabilized or stable to heat, Opaque, Sterilizable, Ethylene Oxide (EtO) Sterilization, Steam sterilization, Gamma irradiation sterilization, Electron beam (e-beam) sterilization

Features

Amorphous, Creep Resistance, Good Adhesion, Low Smoke

Chemical Resistance

General Chemical Resistance, Hydrolytically Stable, Radiation Resistance

Applications

Medical

Regional Availability

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