ULTEM™ Resin HU2100

DESCRIPTION

10% Glass fiber filled, standard flow Polyetherimide (Tg 217C). US FDA and European Food Contact approved. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI); Steam, Gamma, EtO, and E-beam sterilizable.

This material is food contact compliant in most jurisdictions – exceptions may exist, request a declaration for details.

GENERAL INFORMATION	
Features	Flame Retardant, Chemical Resistance, Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, IR Transparent, Low Moisture Absorption, UV-C resistant, Bio-Renewable, Biocompatability-ISO10993, Food contact, Healthcare/Formula lock, Non Cl/Br flame retardant, Non halogenated flame retardant, Electroplatable, Autoclave/Steam sterilizable, Creep resistant, Dimensional stability, High stiffness/Strength, High temperature resistance, Sterilizable, No PFAS intentionally added, Additive Manufacturing
Fillers	Glass Fiber (Total fluorine >50ppm only from inorganic fluorine)
Polymer Types	Polyetherimide (PEI)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Hygiene and Healthcare	Pharmaceutical Packaging and Drug Delivery, Surgical devices, General Healthcare, Patient Testing

TYPICAL PROPERTY VALUES

Revision 20250404

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 5 mm/min	114	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	115	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	6	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	6	%	ASTM D638
Tensile Modulus, 5 mm/min	4680	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	160	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	5500	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	115	MPa	ISO 527
Tensile Stress, break, 5 mm/min	115	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	4	%	ISO 527
Tensile Strain, break, 5 mm/min	4	%	ISO 527
Tensile Modulus, 1 mm/min	4500	MPa	ISO 527
Flexural Stress, break, 2 mm/min	185	MPa	ISO 178
Flexural Modulus, 2 mm/min	4500	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	53	J/m	ASTM D256
Izod Impact, notched, -30°C	53	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	10	J	ASTM D3763
Izod Impact, unnotched 80*10*4 +23°C	30	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	30	kJ/m²	ISO 180/1U

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	7	kJ/m²	ISO 179/1eA
THERMAL [1]			
Vicat Softening Temp, Rate B/50	223	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	205	°C	ASTM D648
CTE, -40°C to 40°C, flow	3.0E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	5.1E-05	1/°C	ASTM E831
CTE, 23°C to 150°C, flow	3.0E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	5.1E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	212	°C	ISO 306
Vicat Softening Temp, Rate B/120	217	°C	ISO 306
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	205	°C	ISO 75/Ae
Relative Temp Index, Elec [2]	170	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	170	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	170	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.34	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm [3]	0.5 – 0.6	%	SABIC method
Melt Flow Rate, 337°C/6.6 kgf	7	g/10 min	ASTM D1238
Density	1.34	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	1	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.6	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	9	cm³/10 min	ISO 1133
ELECTRICAL [1]			
Dielectric Strength, in oil, 3.2 mm	15	kV/mm	IEC 60243-1
Comparative Tracking Index	150	V	IEC 60112
Comparative Tracking Index (UL) {PLC} [2]	4	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 1 [2]	≥3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2 [2]	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 3 [2]	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 4 [2]	≥3	mm	UL 746A
High Voltage Arc Track Rate {PLC} [2]	2	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC} [2]	6	PLC Code	ASTM D495
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E121562-502535	-	-
UL Yellow Card Link 2	E121562-102518191	-	-
UL Recognized, 94-5VA Flame Class Rating	≥1.9	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥0.41	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	150	°C	
Drying Time	4 – 6	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	370 – 410	°C	
Nozzle Temperature	350 – 405	°C	
Front - Zone 3 Temperature	360 – 415	°C	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Middle - Zone 2 Temperature	350 – 405	°C	
Rear - Zone 1 Temperature	340 – 395	°C	
Hopper Temperature	80 – 120	°C	
Mold Temperature	140 – 180	°C	

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

(3) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(4) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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