ULTEM™ RESIN HU2200

REGION AMERICAS

DESCRIPTION

20% Glass fiber filled, enhanced flow Polyetherimide (Tg 217C). ECO Conforming. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI); food contact compliant; Steam, Gamma, EtO, and E-beam sterilizable.

INDUSTRY	SUB INDUSTRY
Consumer	Ophthalmics, Personal Accessory, Personal Recreation
Healthcare	Pharmaceutical, Surgical, Respiratory and Sleep Therapy, Healthcare, Patient Testing, Fluid and Blood Handling, Medical Facility Infrastructure

TYPICAL PROPERTY VALUES

Revision 20190925

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	131	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	131	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	4	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	4	%	ASTM D 638
Tensile Modulus, 5 mm/min	6890	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	225	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	6850	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	131	MPa	ISO 527
Tensile Stress, break, 5 mm/min	131	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	6890	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	228	MPa	ISO 178
Flexural Modulus, 2 mm/min	6890	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	480	J/m	ASTM D 4812
Izod Impact, notched, 23°C	64	J/m	ASTM D 256
Izod Impact, notched, -30°C	70	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	8	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	64	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	70	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	65	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	220	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	208	°C	ASTM D 648
CTE, -40°C to 150°C, xflow	5.E-05	1/°C	ASTM E 831
CTE, -20°C to 150°C, flow	2.5E-05	1/°C	ASTM E 831
CTE, 23°C to 150°C, flow	2.5E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	5.E-05	1/°C	ISO 11359-2

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/50	212	°C	ISO 306
Vicat Softening Temp, Rate B/120	218	°C	ISO 306
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	205	°C	ISO 75/Ae
Relative Temp Index, Elec [1]	170	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	170	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	170	°C	UL 746B
PHYSICAL			
Specific Gravity	1.42	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.3 – 0.5	%	SABIC method
Melt Flow Rate, 337°C/6.6 kgf	6	g/10 min	ASTM D 1238
Density	1.42	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	1	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.55	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	7	cm³/10 min	ISO 1133
ELECTRICAL			
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 1	≥3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 3	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 4	≥3	mm	UL 746A
High Voltage Arc Track Rate {PLC}	2	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E121562-221093	-	-
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			
Drying Temperature	150	°C	
Drying Time	4 – 6	hrs	
Drying Time (Cumulative)	24	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	350 – 400	°C	
Nozzle Temperature	345 – 400	°C	
Front - Zone 3 Temperature	345 – 400	°C	
Middle - Zone 2 Temperature	340 – 400	°C	
Rear - Zone 1 Temperature	330 – 400	°C	
Mold Temperature	135 – 165	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.076	mm	

(1) 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.

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