ULTEM™ RESIN DT1810EV

REGION AMERICAS

DESCRIPTION

Improved ductility, transparent, enhanced flow Polyetherimide blend (Tg 200C) with internal mold release and enhanced ductility. ECO Conforming, UL94 V0 listed.

INDUSTRY	SUB INDUSTRY
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical, Material Handling

TYPICAL PROPERTY VALUES

Revision 20240314

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	103	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	85	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	7	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	80	%	ASTM D638
Tensile Modulus, 5 mm/min	3210	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	145	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	3320	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	98	MPa	ISO 527
Tensile Stress, break, 5 mm/min	80	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	7	%	ISO 527
Tensile Strain, break, 5 mm/min	80	%	ISO 527
Tensile Modulus, 1 mm/min	2500	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	135	MPa	ISO 178
Flexural Modulus, 2 mm/min	3100	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Izod Impact, unnotched, -30°C	NB	J/m	ASTM D4812
Izod Impact, notched, 23°C	32	J/m	ASTM D256
Izod Impact, notched, -30°C	35	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	48	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C	2	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	2	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	2	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	192	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	173	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	178	°C	ASTM D648
CTE, -40°C to 150°C, flow	6.E-05	1/°C	ASTM E831
CTE, -40°C to 150°C, xflow	6.E-05	1/°C	ASTM E831
CTE, 23°C to 150°C, flow	5.5E-05	1/°C	ISO 11359-2

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CTE, 23°C to 150°C, xflow	5.5E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	192	°C	ISO 306
Vicat Softening Temp, Rate B/120	195	°C	ISO 306
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	168	°C	ISO 75/Ae
Relative Temp Index, Elec [1]	105	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	105	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	105	°C	UL 746B
PHYSICAL			
Specific Gravity	1.28	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Melt Flow Rate, 337°C/6.6 kgf	43	g/10 min	ASTM D1238
Density	1.28	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.36	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.08	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	56	cm³/10 min	ISO 1133
OPTICAL			
Light Transmission			
at 1.0 mm and 850 nm	86	%	ASTM D1003
at 1.0 mm and 1350 nm	88	%	ASTM D1003
Refractive Index			
at 850 nm	1.632	-	ISO 489
at 1350 nm	1.619	-	ISO 489
Abbe number	21	-	ISO 489
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
Hot-Wire Ignition (HWI), PLC 3	≥0.75	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 1	≥0.75	mm	UL 746A
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E121562-640471	-	-
UL Recognized, 94-5VA Flame Class Rating	≥3	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥3	mm	UL 94
UL Recognized, 94V-2 Flame Class Rating	≥0.75	mm	UL 94
Glow Wire Ignitability Temperature, 3.0 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 0.75 mm	825	°C	IEC 60695-2-13
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 0.75 mm	960	°C	IEC 60695-2-12
INJECTION MOLDING			
Drying Temperature	135	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	12	Hrs	
Maximum Moisture Content	0.02	%	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Temperature	330 – 355	°C	
Nozzle Temperature	325 – 350	°C	
Front - Zone 3 Temperature	330 – 355	°C	
Middle - Zone 2 Temperature	320 – 345	°C	
Rear - Zone 1 Temperature	310 – 330	°C	
Mold Temperature	95 – 135	°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.

DISCLAIMER