ULTEM™ RESIN DT1810EVUCL

DESCRIPTION

Improved ductility, transparent, enhanced flow Polyetherimide blend (Tg 200C) with internal mold release and enhanced ductility.

GENERAL INFORMATION	
Features	Flame Retardant, Chemical Resistance, Good Processability, High Flow, Hydrolytic Stability, Thin Wall, Amorphous, Low Shrinkage, IR Transparent, Transparent/Translucent, Electroplatable, Enhanced mold release, Creep resistant, Dimensional stability, High stiffness/Strength, High temperature resistance, Impact resistant, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyetherimide (PEI)
Processing Techniques	Injection Molding
Regional Availability	Europe, Asia, Americas

INDUSTRY	SUB INDUSTRY
Automotive	Heavy Truck, Automotive Under the Hood, Motorcycle, Recreational/Specialty Vehicles
Building and Construction	Building Component
Consumer	Personal Accessory
Electrical and Electronics	Energy Management, Drone Solutions, Mobile Phone - Computer - Tablets, Circuit Boards/Additives, Lighting, Printer Copier, Speaker - Earphone, Wireless Communication
Industrial	Electrical, Material Handling, Eyewear
Mass Transportation	Rail
Packaging	Industrial Packaging

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
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 [1]			
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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 [1]			
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
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
PHYSICAL [1]			
Specific Gravity	1.28	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm [2]	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
INJECTION MOLDING [3]			
Drying Temperature	135	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	12	Hrs	
Maximum Moisture Content	0.02	%	
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) 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) 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.

(3) 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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