ULTEM™ RESIN DT1820EVGCR3

DESCRIPTION

DT1820EVGCR3 resin grade is 30% PCR (Post Consumer Recycle) combined with bio-based polyetherimide solutions. High flow high gloss polyetherimide (PEI) blend with internal mold release and enhanced ductility. ISCC+ certified renewable bio-based solutions are available for this grade.

GENERAL INFORMATION	
Features	High Flow, Sustainable (Mechanical Recycling), Sustainable (bio-based offerings), Enhanced mold release, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyetherimide (PEI)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Electrical and Electronics	Electronic Components, Mobile Phone - Computer - Tablets

TYPICAL PROPERTY VALUES

Revision 20250819

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	105	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	76	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	6.3	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	18	%	ASTM D638
Tensile Modulus, 5 mm/min	3055	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	160	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	3140	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	104	MPa	ISO 527
Tensile Stress, break, 50 mm/min	76	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6.4	%	ISO 527
Tensile Strain, break, 50 mm/min	18	%	ISO 527
Tensile Modulus, 1 mm/min	3071	MPa	ISO 527
Flexural Strength, 2 mm/min	154	MPa	ISO 178
Flexural Modulus, 2 mm/min	3028	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	37	J/m	ASTM D256
Izod Impact, unnotched, 23°C	1759	J/m	ASTM D4812
Izod Impact, notched 80*10*4 +23°C	5	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	105	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	3.3	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	84	kJ/m²	ISO 179/1eU
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	182	°C	ASTM D648

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT, 1.82 MPa, 3.2mm, unannealed	168	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	185	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	170	°C	ISO 75/Af
CTE, -40°C to 150°C, flow	5.6E-05	1/°C	ASTM E831
CTE, -40°C to 150°C, xflow	5.8E-05	1/°C	ASTM E831
CTE, -40°C to 150°C, flow	5.5E-05	1/°C	ISO 11359-2
CTE, -40°C to 150°C, xflow	5.6E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	188	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	189	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	189	°C	ISO 306
Vicat Softening Temp, Rate B/120	191	°C	ISO 306
PHYSICAL (1)			
Specific Gravity	1.28	-	ASTM D792
Density	1.28	g/cm³	ISO 1183
Melt Flow Rate			
337°C/6.7 kgf	56	g/10 min	ASTM D1238
Water Absorption, (23°C/24hrs)	0.18	%	ASTM D570
Moisture Absorption, (23°C/50% RH/24hrs)	0.07	%	ISO 62-4
Mold Shrinkage, flow (2)	0.58	%	SABIC method
Mold Shrinkage, xflow (2)	0.62	%	SABIC method
INJECTION MOLDING (3)			
Drying Temperature	135 – 150	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	24	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	320 – 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	110 – 165	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	

(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.

DISCLAIMER