ULTEM™ RESIN DU642

DESCRIPTION

High flow ductile polyetherimide (PEI) blend.

GENERAL INFORMATION	
Features	High Flow, Impact resistant
Fillers	Unreinforced
Polymer Types	Polyetherimide (PEI)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Electrical and Electronics	Mobile Phone - Computer - Tablets

TYPICAL PROPERTY VALUES

Revision 20250910

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	96	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	75	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	6.7	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	35	%	ASTM D638
Tensile Modulus, 50 mm/min	3000	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	144	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2890	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	96	MPa	ISO 527
Tensile Stress, break, 50 mm/min	75	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6.5	%	ISO 527
Tensile Strain, break, 50 mm/min	35	%	ISO 527
Tensile Modulus, 1 mm/min	2925	MPa	ISO 527
Flexural Strength, 2 mm/min	138	MPa	ISO 178
Flexural Modulus, 2 mm/min	2920	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	78	J/m	ASTM D256
Izod Impact, unnotched, 23°C	2140	J/m	ASTM D4812
Izod Impact, notched, -30°C	69	J/m	ASTM D256
Izod Impact, unnotched, -30°C	2140	J/m	ASTM D4812
Izod Impact, notched 80*10*4 +23°C	7.3	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	134	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 -30°C	6.6	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 -30°C	134	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	7.2	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	98	kJ/m²	ISO 179/1eU

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Instrumented Dart Impact Total Energy, 23°C	80	J	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	75	J	ASTM D3763
Instrumented Dart Impact Ductility, 23°C	100	%	ASTM D3763
Instrumented Dart Impact Ductility, -30°C	0	%	ASTM D3763
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	198	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	179	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	199	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	181	°C	ISO 75/Af
CTE, 23°C to 150°C, flow	5.60E-05	1/°C	ASTM E831
CTE, 23°C to 150°C, xflow	6.10E-05	1/°C	ASTM E831
CTE, 23°C to 150°C, flow	5.50E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	6.00E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	202	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	203	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	204	°C	ISO 306
Vicat Softening Temp, Rate B/120	205	°C	ISO 306
PHYSICAL [1]			
Specific Gravity	1.28	-	ASTM D792
Density	1.28	g/cm³	ISO 1183
Moisture Absorption, (23°C/50% RH/24hrs)	0.09	%	ISO 62-4
Melt Flow Rate, 337°C/6.7 kgf	15.4	g/10 min	ASTM D1238
Mold Shrinkage, flow [2]	0.5 – 0.8	%	SABIC method
Mold Shrinkage, xflow [2]	0.5 – 0.8	%	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	340 – 370	°C	
Nozzle Temperature	340 – 370	°C	
Front - Zone 3 Temperature	340 – 370	°C	
Middle - Zone 2 Temperature	335 – 365	°C	
Rear - Zone 1 Temperature	330 – 360	°C	
Mold Temperature	120 – 170	°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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