ULTEM™ RESIN UF5011S

REGION AMERICAS

DESCRIPTION

Enhanced flow, Specialty filtered Polyetherimide (Tg 225C) with enhanced chemical resistance to strong acids, bases, aromatics and ketones. ECO Conforming.

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	100	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	75	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	8	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	60	%	ASTM D638
Tensile Modulus, 5 mm/min	2900	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	138	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	3100	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	100	MPa	ISO 527
Tensile Stress, break, 5 mm/min	85	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	8	%	ISO 527
Tensile Strain, break, 5 mm/min	50	%	ISO 527
Tensile Modulus, 1 mm/min	2900	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	110	MPa	ISO 178
Flexural Modulus, 2 mm/min	2900	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	2100	J/m	ASTM D4812
Izod Impact, notched, 23°C	59	J/m	ASTM D256
Izod Impact, Reverse Notched, 3.2 mm	2080	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	30	J	ASTM D3763
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	5	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	7	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	7	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	227	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	213	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	201	°C	ASTM D648
HDT, 0.45 MPa, 6.4 mm, unannealed	216	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	204	°C	ASTM D648
CTE, -40°C to 150°C, flow	5.5E-05	1/°C	ASTM E831

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CTE, -40°C to 150°C, xflow	5.5E-05	1/°C	ASTM E831
Thermal Conductivity	0.31	W/m-°C	ASTM C177
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
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	220	°C	ISO 306
Vicat Softening Temp, Rate B/50	215	°C	ISO 306
Vicat Softening Temp, Rate B/120	215	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	210	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	200	°C	ISO 75/Ae
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	208	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	198	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.28	-	ASTM D792
Mold Shrinkage on Tensile Bar, flow	0.4 – 0.7	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	0.4 – 0.7	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.4 – 0.7	%	SABIC method
Melt Flow Rate, 337°C/6.6 kgf	11	g/10 min	ASTM D1238
Density	1.28	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	1.2	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.2	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	20	cm³/10 min	ISO 1133
ELECTRICAL			
Dielectric Strength, in oil, 3.2 mm	18	kV/mm	ASTM D149
Relative Permittivity, 50/60 Hz	3.2	-	ASTM D150
Dissipation Factor, 50/60 Hz	0.0021	-	ASTM D150
Volume Resistivity	2.5E+15	Ω.cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ω	IEC 60093
Dielectric Strength, in oil, 3.2 mm	18.1	kV/mm	IEC 60243-1
Dissipation Factor, 50/60 Hz	0.0021	-	IEC 60250
Comparative Tracking Index	150	V	IEC 60112
Comparative Tracking Index, M	100	V	IEC 60112
INJECTION MOLDING			
Drying Temperature	150	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	24	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	365 – 390	°C	
Nozzle Temperature	360 – 380	°C	
Front - Zone 3 Temperature	365 – 390	°C	
Middle - Zone 2 Temperature	355 – 375	°C	
Rear - Zone 1 Temperature	345 – 365	°C	
Mold Temperature	135 – 165	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	

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Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.076	mm	

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