ULTEM™ RESIN 1010F

REGION EUROPE

DESCRIPTION

ULTEM 1010F resin is an amorphous, transparent polyetherimide (PEI) plastic offering a glass transition temperature (Tg) of 217 °C. This inherently flame retardant resin has UL94 V0, V2 and 5VA ratings and is RoHS compliant. ULTEM 1010F resin is an unreinforced general purpose grade offering high heat resistance, high strength and modulus and broad chemical resistance up to high temperatures with easy flow. This grade is US FDA and EU Food Contact compliant. ULTEM 1010F resin is not supported with biocompatibility information. For medical applications which require biocompatibility we offer ULTEM HU1010 resin.

TYPICAL PROPERTY VALUES

Revision 20180329

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Taber Abrasion, CS-17, 1 kg	10	mg/1000cy	SABIC method
Tensile Stress, yield, 50 mm/min	105	MPa	ISO 527
Tensile Stress, break, 50 mm/min	85	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	60	%	ISO 527
Tensile Modulus, 1 mm/min	3200	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	160	MPa	ISO 178
Flexural Modulus, 2 mm/min	3300	MPa	ISO 178
Hardness, H358/30	140	MPa	ISO 2039-1
IMPACT			
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
THERMAL			
Thermal Conductivity	0.21	W/m-°C	ISO 8302
CTE, 23°C to 150°C, flow	5.E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	5.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	215	°C	ISO 306
Vicat Softening Temp, Rate B/50	211	°C	ISO 306
Vicat Softening Temp, Rate B/120	212	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	195	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	190	°C	ISO 75/Ae

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Relative Temp Index, Elec	170	°C	UL 746B
Relative Temp Index, Mech w/impact	170	°C	UL 746B
Relative Temp Index, Mech w/o impact	170	°C	UL 746B
PHYSICAL			
Mold Shrinkage on Tensile Bar, flow (2) (5)	0.5 – 0.7	%	SABIC method
Density	1.27	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	1.25	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.7	%	ISO 62
Melt Volume Rate, MVR at 340°C/5.0 kg	13	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 1.6 mm	28	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.9	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.0005	-	IEC 60250
Dissipation Factor, 1 MHz	0.006	-	IEC 60250
Dissipation Factor, 2450 MHz	0.0025	-	IEC 60250
Comparative Tracking Index	150	V	IEC 60112
Comparative Tracking Index, M	100	V	IEC 60112
Relative Permittivity, 50/60 Hz	2.9	-	IEC 60250
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	0.75	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	47	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	150	°C	
Drying Time	4 – 6	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	370 – 410	°C	
Nozzle Temperature	360 – 410	°C	
Front - Zone 3 Temperature	370 – 420	°C	
Middle - Zone 2 Temperature	360 – 410	°C	
Rear - Zone 1 Temperature	350 – 400	°C	
Hopper Temperature	80 – 120	°C	
Mold Temperature	140 – 180	°C	

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