Ultem* Resin 2310R

Europe-Africa-Middle East: COMMERCIAL

30% Glass fiber filled, enhanced flow Polyetherimide (Tg 217C) with internal mold release. Resin is RoHS compliant. UL94 V0 and 5VA listing.

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Taber Abrasion, CS-17, 1 kg	20	mg/1000cy	SABIC Method
Tensile Stress, break, 5 mm/min	165	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2	%	ISO 527
Tensile Modulus, 1 mm/min	9500	MPa	ISO 527
Flexural Stress, break, 2 mm/min	225	MPa	ISO 178
Flexural Modulus, 2 mm/min	8500	MPa	ISO 178
Hardness, H358/30	165	MPa	ISO 2039-1
IMPACT			
Izod Impact, unnotched, 23°C	430	J/m	ASTM D 4812
Izod Impact, notched, 23°C	100	J/m	ASTM D 256
Izod Impact, unnotched 80*10*4 +23°C	40	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	40	kJ/m²	ISO 180/1U
Charpy Impact, notched, 23°C	10	kJ/m²	ISO 179/2C
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	40	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	40	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	228	°C	ASTM D 1525
Thermal Conductivity	0.3	W/m-°C	ISO 8302
CTE, 23°C to 150°C, flow	2.E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	6.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	225	°C	ISO 306
Vicat Softening Temp, Rate B/50	213	°C	ISO 306

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.
(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
(4) Internal measurements according to UL standards.
(5) 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.

Source GMD, last updated:

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THERMAL			
Vicat Softening Temp, Rate B/120	220	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	215	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	210	°C	ISO 75/Ae
Relative Temp Index, Elec	180	°C	UL 746B
Relative Temp Index, Mech w/impact	170	°C	UL 746B
Relative Temp Index, Mech w/o impact	180	°C	UL 746B
PHYSICAL			
Specific Gravity	1.51	-	ASTM D 792
Water Absorption, 24 hours	0.18	%	ASTM D 570
Mold Shrinkage on Tensile Bar, flow (2) (5)	0.2 - 0.4	%	SABIC Method
Density	1.51	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.9	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.5	%	ISO 62
ELECTRICAL			
Volume Resistivity	1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 0.8 mm	35	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	26	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	15	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	3.4	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.0016	-	IEC 60250
Dissipation Factor, 1 kHz	0.0015	-	IEC 60250
Dissipation Factor, 1 MHz	0.0023	-	IEC 60250
Dissipation Factor, 2450 MHz	0.0053	-	IEC 60250
Relative Permittivity, 50/60 Hz	3.3	-	IEC 60250

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FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	0.25	mm	UL 94
UL Recognized, 94-5VA Rating (3)	1.2	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	48	%	ISO 4589

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
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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