ULTEM™ Resin 2100R
Americas: COMMERCIAL

10% Glass fiber filled, standard flow Polyetherimide (Tg 217C) with internal mold release. ECO Conforming, UL94 V0 and 5VA listing.

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	1160	kgf/cm²	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	1180	kgf/cm²	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	6	%	ASTM D 638
Tensile Modulus, 5 mm/min	47800	kgf/cm²	ASTM D 638
Flexural Stress, brk, 2.6 mm/min, 100 mm span	2030	kgf/cm²	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	52700	kgf/cm²	ASTM D 790
Hardness, Rockwell M	114	-	ASTM D 785
IMPACT			
Izod Impact, unnotched, 23°C	49	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	8	cm-kgf/cm	ASTM D 256
Izod Impact, Reverse Notched, 3.2 mm	51	cm-kgf/cm	ASTM D 256
THERMAL			
Vicat Softening Temp, Rate B/50	223	°C	ASTM D 1525
HDT, 0.45 MPa, 6.4 mm, unannealed	210	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	208	°C	ASTM D 648
CTE, -20°C to 150°C, flow	3.24E-05	1/°C	ASTM E 831
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			
Specific Gravity	1.34	-	ASTM D 792
Water Absorption, 24 hours	0.21	%	ASTM D 570
Water Absorption, equilibrium, 23C	1.2	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.6	%	SABIC Method

(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.
(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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PHYSICAL			
Melt Flow Rate, 337°C/6.6 kgf	7.8	g/10 min	ASTM D 1238
ELECTRICAL			
Volume Resistivity	1.E+17	Ohm-cm	ASTM D 257
Dielectric Strength, in oil, 1.6 mm	27.5	kV/mm	ASTM D 149
Relative Permittivity, 1 kHz	3.5	-	ASTM D 150
Dissipation Factor, 1 kHz	0.0014	-	ASTM D 150
Dissipation Factor, 2450 MHz	0.0046	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
Hot Wire Ignition {PLC)	1	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	2	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	0.4	mm	UL 94
UL Recognized, 94-5VA Rating (3)	1.9	mm	UL 94
Oxygen Index (LOI)	47	%	ASTM D 2863
NBS Smoke Density, Flaming, Ds 4 min	1.8	-	ASTM E 662

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	150	°C
Drying Time	4 - 6	hrs
Drying Time (Cumulative)	24	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	350 - 400	°C
Nozzle Temperature	345 - 400	°C
Front - Zone 3 Temperature	345 - 400	°C
Middle - Zone 2 Temperature	340 - 400	°C
Rear - Zone 1 Temperature	330 - 400	°C
Mold Temperature	135 - 165	°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

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