ULTEM™ Resin ATX103R
Americas: OBSOLETE

30% Glass fiber filled, high flow Polyetherimide blend with internal mold release. ECO Conforming, UL94 V0 and 5VA listing in recognized colors.

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	1340	kgf/cm²	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	1340	kgf/cm²	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	2.7	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	2.7	%	ASTM D 638
Tensile Modulus, 5 mm/min	91500	kgf/cm²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	2070	kgf/cm²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	84300	kgf/cm²	ASTM D 790
Tensile Stress, yield, 5 mm/min	132	MPa	ISO 527
Tensile Stress, break, 5 mm/min	132	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2.5	%	ISO 527
Tensile Strain, break, 5 mm/min	2.5	%	ISO 527
Tensile Modulus, 1 mm/min	8920	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	207	MPa	ISO 178
Flexural Modulus, 2 mm/min	8290	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	92	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	14	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	214	cm-kgf	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	58	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	52	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	9	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	8	kJ/m²	ISO 180/1A

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(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.

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IMPACT			
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	9	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	9	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	60	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	62	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	180	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	170	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	161	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	174	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	165	°C	ASTM D 648
CTE, -40°C to 150°C, flow	2.1E-05	1/°C	ASTM E 831
CTE, -40°C to 150°C, xflow	6.3E-05	1/°C	ASTM E 831
CTE, 23°C to 150°C, flow	2.1E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	6.3E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	176	°C	ISO 306
Vicat Softening Temp, Rate B/120	177	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	162	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	158	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.45	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow (2) (5)	0.2 - 0.4	%	SABIC Method
Mold Shrinkage, flow, 3.2 mm (5)	0.2 - 0.4	%	SABIC Method
Mold Shrinkage, xflow, 3.2 mm (5)	0.3 - 0.5	%	SABIC Method
Melt Flow Rate, 337°C/6.6 kgf	60	g/10 min	ASTM D 1238

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TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
PHYSICAL			
Density	1.45	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.35	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.12	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	40	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.2E+16	Ohm-cm	IEC 60093
Surface Resistivity, ROA	2.8E+13	Ohm	IEC 60093
Dielectric Strength, in oil, 1.6 mm	22	kV/mm	IEC 60243-1
Dissipation Factor, 50/60 Hz	0.004	-	IEC 60250
Dissipation Factor, 1 kHz	0.006	-	IEC 60250
Dissipation Factor, 1 MHz	0.011	-	IEC 60250
Comparative Tracking Index	125	V	IEC 60112
Comparative Tracking Index, M	125	V	IEC 60112
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	1.5	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3	mm	UL 94

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	135	°C
Drying Time	4 - 6	hrs
Drying Time (Cumulative)	12	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	330 - 355	°C
Nozzle Temperature	325 - 350	°C
Front - Zone 3 Temperature	330 - 355	°C
Middle - Zone 2 Temperature	320 - 345	°C
Rear - Zone 1 Temperature	310 - 330	°C
Mold Temperature	95 - 135	°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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