



ULTEM™ Resin ATX202R

Americas: OBSOLETE

20% Glass fiber filled, high flow Polyetherimide blend 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	1410	kgf/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	1380	kgf/cm ²	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	2.9	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	3	%	ASTM D 638
Tensile Modulus, 5 mm/min	77900	kgf/cm ²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	2210	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	70600	kgf/cm ²	ASTM D 790
Tensile Stress, yield, 5 mm/min	134	MPa	ISO 527
Tensile Stress, break, 5 mm/min	134	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2.7	%	ISO 527
Tensile Strain, break, 5 mm/min	3.4	%	ISO 527
Tensile Modulus, 1 mm/min	7710	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	215	MPa	ISO 178
Flexural Modulus, 2 mm/min	6400	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	76	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	7	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	152	cm-kgf	ASTM D 3763
Izod Impact, unnotched 80°10°4 +23°C	42	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80°10°4 -30°C	39	kJ/m ²	ISO 180/1U
Izod Impact, notched 80°10°4 +23°C	6	kJ/m ²	ISO 180/1A
Izod Impact, notched 80°10°4 -30°C	6	kJ/m ²	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.

Source GMD, last updated:

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
IMPACT			
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	39	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	42	kJ/m ²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	210	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	199	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	196	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	204	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	198	°C	ASTM D 648
CTE, -40°C to 150°C, flow	1.5E-05	1/°C	ASTM E 831
CTE, -40°C to 150°C, xflow	4.7E-05	1/°C	ASTM E 831
CTE, 23°C to 150°C, flow	1.5E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	4.7E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	208	°C	ISO 306
Vicat Softening Temp, Rate B/120	209	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	196	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	188	°C	ISO 75/Ae
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	188	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.43	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow (2) (5)	0.3 - 0.5	%	SABIC Method
Mold Shrinkage, flow, 3.2 mm (5)	0.3 - 0.5	%	SABIC Method
Mold Shrinkage, xflow, 3.2 mm (5)	0.4 - 0.6	%	SABIC Method

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(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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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
PHYSICAL			
Melt Flow Rate, 337°C/6.6 kgf	23	g/10 min	ASTM D 1238
Density	1.43	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.67	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.25	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	22	cm ³ /10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.4E+16	Ohm-cm	IEC 60093
Surface Resistivity, ROA	1.8E+13	Ohm	IEC 60093
Dielectric Strength, in oil, 1.6 mm	23	kV/mm	IEC 60243-1
Dissipation Factor, 50/60 Hz	0.003	-	IEC 60250
Dissipation Factor, 1 kHz	0.002	-	IEC 60250
Dissipation Factor, 1 MHz	0.008	-	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)	10	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	350 - 370	°C
Nozzle Temperature	350 - 370	°C
Front - Zone 3 Temperature	350 - 370	°C
Middle - Zone 2 Temperature	345 - 365	°C
Rear - Zone 1 Temperature	340 - 360	°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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