



Ultem* Resin 1000
Americas: COMMERCIAL

Transparent, standard flow Polyetherimide (Tg 217°C). ECO Conforming, UL94 V0 and 5VA listing. US FDA and EU Food Contact compliant, NSF 51 listing, ISO 10993 compliant in natural color.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	110	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	7	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	60	%	ASTM D 638
Tensile Modulus, 5 mm/min	3580	MPa	ASTM D 638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	165	MPa	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	3510	MPa	ASTM D 790
Hardness, Rockwell M	109	-	ASTM D 785
Taber Abrasion, CS-17, 1 kg	10	mg/1000cy	ASTM D 1044
IMPACT			
Izod Impact, unnotched, 23°C	1335	J/m	ASTM D 4812
Izod Impact, notched, 23°C	53	J/m	ASTM D 256
Izod Impact, Reverse Notched, 3.2 mm	1335	J/m	ASTM D 256
Gardner, 23°C	36	J	ASTM D 3029
THERMAL			
Vicat Softening Temp, Rate B/50	218	°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	201	°C	ASTM D 648
CTE, -20°C to 150°C, flow	5.58E-05	1/°C	ASTM E 831
CTE, -20°C to 150°C, xflow	5.4E-05	1/°C	ASTM E 831
Thermal Conductivity	0.22	W/m-°C	ASTM C 177
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	1.27	-	ASTM D 792
Water Absorption, 24 hours	0.25	%	ASTM D 570
Water Absorption, equilibrium, 23C	1.25	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.5 - 0.7	%	GE Method
Melt Flow Rate, 337°C/6.6 kgf	9	g/10 min	ASTM D 1238
Poisson's Ratio	0.3	-	ASTM D 638
ELECTRICAL			
Volume Resistivity	1.E+17	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 1.6 mm	32.7	kV/mm	ASTM D 149

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume rate are measured on injection moulded samples. All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. 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) Own measurement according to UL.

Source, GMD, Last Update:04/14/2003

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
ELECTRICAL			
Dielectric Strength, in air, 1.6 mm	32.7	kV/mm	ASTM D 149
Dielectric Strength, in oil, 1.6 mm	27.9	kV/mm	ASTM D 149
Dielectric Strength, in oil, 3.2 mm	19.6	kV/mm	ASTM D 149
Relative Permittivity, 100 Hz	3.15	-	ASTM D 150
Relative Permittivity, 1 kHz	3.15	-	ASTM D 150
Dissipation Factor, 100 Hz	0.0015	-	ASTM D 150
Dissipation Factor, 1 kHz	0.0012	-	ASTM D 150
Dissipation Factor, 2450 MHz	0.0025	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	5	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}	3	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
FLAME CHARACTERISTICS			
CSA (See File for complete listing)	LS88480	File No.	CSA LISTED
Oxygen Index (LOI)	47	%	ASTM D 2863
NBS Smoke Density, Flaming, Ds 4 min	0.7	-	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
Extrusion Blow Molding		
Drying Temperature	140 - 150	°C
Drying Time	4 - 6	hrs
Drying Time (Cumulative)	24	hrs
Maximum Moisture Content	0.01 - 0.02	%
Melt Temperature (Parison)	320 - 355	°C
Barrel - Zone 1 Temperature	325 - 350	°C
Barrel - Zone 2 Temperature	330 - 355	°C
Barrel - Zone 3 Temperature	330 - 355	°C
Barrel - Zone 4 Temperature	330 - 355	°C
Adapter - Zone 5 Temperature	330 - 355	°C
Head - Zone 6 - Top Temperature	330 - 355	°C
Head - Zone 7 - Bottom Temperature	330 - 355	°C
Screw Speed	10 - 70	rpm

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