

Lexan* Resin 500R

Americas: COMMERCIAL

10% GR PC. Optimum combination of high modulus plus excellent impact strength and flame retardance. Internal mold release.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	670	kgf/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	560	kgf/cm ²	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	8	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	15	%	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1050	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	35100	kgf/cm ²	ASTM D 790
Hardness, Rockwell M	85	-	ASTM D 785
Hardness, Rockwell R	124	-	ASTM D 785
Taber Abrasion, CS-17, 1 kg	11	mg/1000cy	ASTM D 1044
IMPACT			
Izod Impact, unnotched, 23°C	217	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	10	cm-kgf/cm	ASTM D 256
Tensile Impact, Type S	160	cm-kgf/cm ²	ASTM D 1822
Falling Dart Impact (D 3029), 23°C	1036	cm-kgf	ASTM D 3029
THERMAL			
Vicat Softening Temp, Rate B/50	154	°C	ASTM D 1525
HDT, 0.45 MPa, 6.4 mm, unannealed	146	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	142	°C	ASTM D 648
CTE, -40°C to 95°C, flow	3.24E-05	1/°C	ASTM E 831
Specific Heat	1.21	J/g-°C	ASTM C 351
Thermal Conductivity	0.2	W/m-°C	ASTM C 177
Relative Temp Index, Elec	130	°C	UL 746B
Relative Temp Index, Mech w/impact	130	°C	UL 746B

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 this or any other material under actual fire conditions.
4) Own measurement according to UL.
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 Update:

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
THERMAL			
Relative Temp Index, Mech w/o impact	130	°C	UL 746B
PHYSICAL			
Specific Gravity	1.27	-	ASTM D 792
Specific Volume	0.8	cm ³ /g	ASTM D 792
Density	1.245	g/cm ³	ASTM D 792
Water Absorption, 24 hours	0.12	%	ASTM D 570
Water Absorption, equilibrium, 23C	0.31	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm (5)	0.2 - 0.4	%	SABIC Method
Melt Flow Rate, 300°C/1.2 kgf	7.5	g/10 min	ASTM D 1238
ELECTRICAL			
Volume Resistivity	>1.E+17	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 3.2 mm	17.7	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	3.1	-	ASTM D 150
Relative Permittivity, 1 MHz	3.05	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.0008	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0075	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	7	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	1	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	1.52	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3.04	mm	UL 94
Oxygen Index (LOI)	36	%	ASTM D 2863
Radiant Panel Listing	YES	-	UL Tested

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
FLAME CHARACTERISTICS			
UV-light, water exposure/immersion	F2	-	UL 746C

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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
Injection Molding		
Drying Temperature	120	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	310 - 330	°C
Nozzle Temperature	305 - 325	°C
Front - Zone 3 Temperature	310 - 330	°C
Middle - Zone 2 Temperature	300 - 320	°C
Rear - Zone 1 Temperature	290 - 310	°C
Mold Temperature	80 - 115	°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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