



**LEXAN™ Resin 3412R**  
**Americas: COMMERCIAL**

20% GR, provides improved mechanical properties and UL94 V-1 rated at 0.058". Internal mold release added.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, brk, Type I, 5 mm/min	1120	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	5	%	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1330	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	56200	kgf/cm <sup>2</sup>	ASTM D 790
Hardness, Rockwell M	91	-	ASTM D 785
Hardness, Rockwell R	122	-	ASTM D 785
Taber Abrasion, CS-17, 1 kg	17	mg/1000cy	ASTM D 1044
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	103	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	10	cm-kgf/cm	ASTM D 256
Tensile Impact, Type S	64	cm-kgf/cm <sup>2</sup>	ASTM D 1822
Falling Dart Impact (D 3029), 23°C	55	cm-kgf	ASTM D 3029
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	165	°C	ASTM D 1525
HDT, 0.45 MPa, 6.4 mm, unannealed	148	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	146	°C	ASTM D 648
CTE, -40°C to 95°C, flow	2.7E-05	1/°C	ASTM E 831
Specific Heat	1.17	J/g-°C	ASTM C 351
Thermal Conductivity	0.21	W/m-°C	ASTM C 177
Relative Temp Index, Elec	130	°C	UL 746B
Relative Temp Index, Mech w/impact	130	°C	UL 746B
Relative Temp Index, Mech w/o impact	130	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.35	-	ASTM D 792

(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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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>PHYSICAL</b>			
Specific Volume	0.74	cm <sup>3</sup> /g	ASTM D 792
Density	1.356	g/cm <sup>3</sup>	ASTM D 792
Water Absorption, 24 hours	0.16	%	ASTM D 570
Water Absorption, equilibrium, 23C	0.29	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm (5)	0.1 - 0.3	%	SABIC Method
Melt Flow Rate, 300°C/1.2 kgf	4.3	g/10 min	ASTM D 1238
<b>ELECTRICAL</b>			
Volume Resistivity	>1.E+17	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 3.2 mm	19.2	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	3.17	-	ASTM D 150
Relative Permittivity, 1 MHz	3.13	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.0009	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0073	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	7	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	0	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	5	PLC Code	UL 746A
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-1 Flame Class Rating (3)	1.47	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating (3)	2.99	mm	UL 94
UL Recognized, 94-5VA Rating (3)	2.99	mm	UL 94

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<b>Injection Molding</b>		
Drying Temperature	120	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	315 - 340	°C
Nozzle Temperature	310 - 330	°C
Front - Zone 3 Temperature	315 - 340	°C
Middle - Zone 2 Temperature	305 - 325	°C
Rear - Zone 1 Temperature	295 - 315	°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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