



# THE GUND COMPANY

MANUFACTURERS & FABRICATORS OF ENGINEERED MATERIAL SOLUTIONS

## Makrolon™ Series

### Amorphous Polycarbonate Engineering Plastic

Makrolon® polycarbonate is a thermoplastic with high dimensional stability and excellent heat resistance. It is robust, lightweight, and impact-resistant (even at low temperatures). Makrolon® is easily fabricated. Applications include medical devices, automotive headlamps, sporting equipment, electronics, and numerous other products.

The Gund Company custom fabricates insulation materials to the exact specifications and drawings specified by our customers. We offer our customers the proper product for their specific application. A variety of dimensions and diameter sizes are available. Product colors vary according to material type.

PROPERTIES	ASTM		TYPICAL VALUES	
	Test Method	Units	General	Low Flammability
<b>PHYSICAL</b>	Specific Gravity	ASTM D792	1.20000	1.20000
	Water Absorption: 24 hrs.	ASTM D570	% 0.15	-
<b>THERMAL</b>	Coefficient of Thermal Expansion	ASTM D696	µin/in.°F	37.5
	Coefficient of Thermal Conductivity	ASTM C177		1.35
	Heat Deflection Temperature at 264 PSI	ASTM 648	°F	270.00
	Heat Deflection Temperature at 66 PSI	ASTM D648	°F	280
	Brittle Temperature	ASTM D746	°F	-200.00
	Shading Coefficient: Clear at 1/8"	ASHRAE		1.02
	Shading Coefficient Gray: Bronze at 1/8"	ASHRAE		0.70
	Value 1/4" (Summer gain, Winter loss)			0.90, 0.96
	Horizontal Burn: AEB	ASTM D635	Inches	<1
	Ignition Temperature: Self / Flash	ASTM D1929	°F	1070 / 870
	Flammability: Clear at 0.060"	UL 94		HB
Flammability: Clear at 0.080"	UL 94		-	
<b>MECHANICAL</b>	Tensile Strength at Yield	ASTM D638	PSI	9,000
	Tensile Strength: Ultimate	ASTM D638	PSI	9,500
	Tensile Modulus	ASTM D638	PSI	345,000
	Flexural Strength	ASTM D790	PSI	13,500
	Flexural Modulus	ASTM D790	PSI	345,000
	Compressive Strength	ASTM D695	PSI	12,500
	Compressive Modulus	ASTM D695	PSI	345,000
	Elongation	ASTM D638	%	110
	Poisson's Ratio			0.38
	Izod Impact Strength: Notched at 1/8"	ASTM D256	ft-lbs/in	12-16
	Izod Impact Strength: Unnotched at 1/8"	ASTM D256	ft-lbs/in	60 (No failure)
	Instrumented Impact: 1/8"	ASTM D3763	ft-lbs	>45
	Shear Strength at Yield	ASTM D732	PSI	6,000
	Shear Strength: Ultimate	ASTM D732	PSI	10,000
	Shear Modulus	ASTM D732	PSI	114,000
Rockwell Hardness: M Scale	ASTM D785		70	
Rockwell Hardness: R Scale	ASTM D785		118	
<b>ELECTRICAL</b>	Dielectric Constant at 10 Hz	ASTM D150		2.96
	Dielectric Constant at 60 Hz	ASTM D150		3.17
	Volume Resistivity	ASTM D257	Ohm-cm	8.2·10 <sup>16</sup>
	Dissipation Factor at 60 Hz	ASTM D150		0.0009
	Dissipation Factor at 1 MHz	ASTM D150		0.01
	Arc Resistance: Stainless Steel Strip Electrode		Seconds	45,941
	Arc Resistance: Tungsten Electrodes		Seconds	120
	Dielectric Strength: in Air (125 mils)	ASTM D149	V/mil	380

The data supplied are typical values. They are not to be considered specification values. All of the information, suggestions, and recommendations about these properties and uses of the products herein are based on tests and data believed to be accurate; however, the final determination regarding the suitability of any material described herein for the contemplated application, the manner of such use, and whether the use infringes any patents is the sole responsibility of the user. There is no warranty - expressed or implied - including, without limitation, warranties of merchantability or fitness for a particular purpose. Under no circumstances shall we be liable for incidental or consequential loss or damage.