

## Material Data Sheet

- Item:** Polycarbonates
- Description:** Known by such trade names as Lexan, Tuffak, Merlin, and Hyzod. Polycarbonate sheet is 250 times the strength of glass. In thicknesses of 1/8 inch or greater, polycarbonates have a UL94V-0 rating. They are self-extinguishing.
- Application:** In electrical apparatus, polycarbonate material often used as a sight window material for metal enclosed switchgear. Also, polycarbonate is commonly used as a clear view barrier serving as both a dielectric barrier and as a sight window to verify equipment operation. Polycarbonate has general maintenance uses for glazing and machine guards where the need for very high impact resistance is required.
- Availability:** Many thermoplastics are available in a multitude of forms such as sheets, rods, and tubes. The Gund Company can fabricate a wide range of thermoplastic components per the specifications of our customers. Please do not hesitate to call or fax us your requirements.

<b>Typical Properties:</b>	<b>(Average Value)</b>
Specific Gravity	0.940 - 0.942
Specific Volume (cu. in. per lb.)	29.8
Refractive Index	----
Tensile Strength (PSI)	2,500
Elongation (%)	5.25
Modulus of Elasticity in Tension ( $10^3$ , PSI)	1.02
Compressive Strength (PSI)	----
Flexural Strength (PSI)	----
Impact Strength (ft.-lb. per in. of notch)	No Break
Rockwell Hardness	R38
Thermal Conductivity	----
Specific Heat (cal per C° per gm)	----
Thermal Expansion (.001 per C°)	7.2
Resistance to Heat (F°, continuous)	----
Heat Distortion Temperature (F°)	163
Volume Resistivity, ohm cm	$> 8.2^{16}$
Dielectric Strength, Short Time, In Oil @ 23° C (.125" thk)	$> 380$ VPM
Dielectric Constant, 60 Hz (1 Mhz)	3.17 (2.96)
Dissipation Factor, 60 Hz (1 Mhz)	0.0009 (0.0100)

All of the information, suggestions, and recommendations pertaining to the properties and uses of the products herein are based upon tests and data believed to be accurate; however, the final determination regarding the suitability of any material described herein for the use contemplated, 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 warranty of merchantability or fitness for a particular purpose. Under no circumstances shall we be liable for incidental or consequential loss or damage.

## Material Data Sheet

**Item:** Polycarbonates

**Typical Properties:**

**Polycarbonates:  
(Average Value)**

**Electrical Properties**

Dielectric Strength (short time 1/8 thick)	710
Dielectric Strength (step-by-step 1/8 thick)	680
Dielectric Constant (60 cycles)	----
Dielectric Constant ( $10^3$ cycles)	----
Dielectric Constant ( $10^6$ cycles)	2.30
Dissipation (Power) Factor (60 cycles)	----
Dissipation (Power) Factor ( $10^3$ cycles)	----
Dissipation (Power) Factor ( $10^6$ cycles)	0.0002
Arc Resistance (Seconds)	----

**Chemical Properties**

Water Absorption (24 hr., 1/8 in thick, %)	0.1
Burning Rate	Very Slow
Effect of Sunlight	----
Effect of Weak Acids	Very Resistant
Effect of Strong Acids	----
Effect of Weak Alkalies	----
Effect of Organic Solvents	----
Clarity	Translucent to Opaque