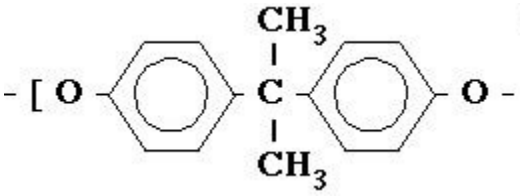
POLYCARBONATE OF BISPHENOL A (PC)

Gallina products are made of Polycarbonate resin. Among all “Engineering Plastics”, the PC (Polycarbonate) considers the best for:



- Hi Impact Resistance
- Excellent clarity
- Flame resistance
- Light weight
- Weathering stability
- Ease of fabrication

Please **contact us** regarding any more questions you have or info you need.

- **Policarb - installation Instructions**
- **Click here for MSDS**
- **Specification**
- **Load Capacity for policarb**
- **Click here for Warranty**
- **Click here for chemical resistance list**

(Requires connection to the Internet)

TECHNICAL / CHEMICAL DETAILS

PROPERTIES

Glass transition temperature: 145ºC
Melting temperature: 225ºC
Amorphous density at 25ºC: 1.20 g/cm3
Molecular weight of repeat unit: 254.3 g/mol

TYPICAL PHYSICAL PROPERTIES

Description
Polycarbonate (PC) is a clear, colorless polymer used extensively for engineering and optical applications. It is available commercially in both pellet and sheet form. Outstanding properties include impact strength and scratch resistance. The most serious deficiencies are poor weatherability and chemical resistance.

Suppliers

Bayer Corporation

Dow Chemical (Requires connection to the Internet)

{**Click here for Calibre 600**}

GE Plastics

Physical Properties		*Average*	*Grade Count*
Density	1.17 - 1.45 g/cc 0.0423 - 0.0524 lb/in³	1.2 g/cc	88
Water Absorption	0.09 - 0.35 %	0.17%	67
Moisture Absorption at Equilibrium	0.15 - 0.35 %	0.27%	13
Water Absorption at Saturation	0.35 %		7
Linear Mold Shrinkage	0.003 - 0.0075 cm/cm / 0.003 - 0.0075 in/in	0.0061 cm/cm	72
Melt Flow	2 - 71 g/10 min	14.2 g/10 min	76

Mechanical Properties		*Average*	*Grade Count*
Hardness	Rockwell M 65 - 76	70.9	14
Hardness	Rockwell R 118 - 122	120	19
Tensile Strength	Ultimate 54 - 72 MPa / 7830 - 10400 psi	64 MPa	71
Tensile Strength	Yield 58.6 - 70 MPa / 8500 - 10200 psi	62 MPa	27
Elongation	at Break 8 - 135 %	97.9%	79
Elongation	at Yield 6 - 8 %	6.1%	15
Tensile Modulus	1.6 - 2.4 GPa / 232 - 348 ksi	2.3 GPa	25
Flexural Modulus	1.8 - 4.134 GPa / 261 - 600 ksi	2.3 GPa	84
Flexural Yield Strength	75 - 110 MPa / 10900 - 16000 psi	91.8 MPa	75
Compressive Yield Strength	18 - 86 MPa / 2610 - 12500 psi	69.7 MPa	6
Izod Impact	Notched 0.5 - 9.77 J/cm / 0.937 - 18.3 ft-lb/in	7.2 J/cm	80
Izod Impact	Untouched 16 - 21.4 J/cm / 30 - 40.1 ft-lb/in	19.5 J/cm	5
Izod Impact	Notched Low Temp 6.4 J/cm / 12 ft-lb/in		1

Charpy Impact	Unnotched NB / Grade		5
Charpy Impact	Notched 0.9 J/cm² / 4.28 ft-lb/in²		1
Tensile Impact	Strength 580 kJ/m² / 276 ft-lb/in²		3
Tensile Creep Modulus	1 hour 2200 MPa / 319000 psi		3
Tensile Creep Modulus	1000 hours 17 - 1900 MPa / 2470 - 276000 psi	1400 MPa	4

Electrical Properties		*Average*	*Grade Count*
Electrical Resistively	1e+015 - 2e+017 ohm-cm / 1e+015 - 2e+017 ohm-cm	7E+16 ohm-cm	37
Surface Resistance	1e+015 ohm / 1e+015 ohm		7
Dielectric Constant	2.9 - 3 / 2.9 - 3	3	32
Dielectric Constant	Low Frequency 3 - 3.17	3.1	29
Dielectric Strength	15 - 30 kV/mm / 381 - 762 kV/in	26.4 kV/mm	9
Dissipation Factor	0.0007 - 0.01	0.00966	33
Dissipation Factor	Low Frequency 0.0007 - 0.001	0.000906	32
Arc Resistance	60 - 120 sec / 60 - 120 sec	110 sec	4
Comparative Tracking Index	275 - 600 V	370 V	5
Hot Wire Ignition	HWI 30 sec / 30 sec		2
High Amp Arc Ignition	HAI 120 arcs / 120 arcs		2
High Voltage Arc-Tracking Rate	HVTR 10 mm/min / 0.394 in/min		2

Thermal Properties		*Average*	*Grade Count*
CTE	linear 20° C 32 - 120 µm/m-° C / 17.8 - 66.7 µin/in-° F	70.2 µm/m-° C	48
CTE	linear 20° C Transverse to Flow 70 µm/m-° C / 38.9 µin/in-° F		4
CTE	linear 100° C 65 µm/m-° C / 36.1 µin/in-° F		1
Heat Capacity	1 - 1.2 J/g-° C / 0.239 - 0.287 BTU/lb-° F	1.2 J/g-K	4
Thermal Conductivity	0.19 - 0.21 W/m-K / 1.32 - 1.46 BTU-in/hr-ft²-° F	0.2 W/m-K	6
Maximum Service Temperature	Air 95 - 154° C / 203 - 309° F	130° C	90

Deflection Temperature	at 0.46 MPa (66 psi) 115 - 143° C / 239 - 289° F	130° C	72
Deflection Temperature	at 1.8 MPa (264 psi) 95 - 154° C / 203 - 309° F	130° C	90
Vicat Softening Point	126 - 157° C / 259 - 315° F	150° C	32
Minimum Service Temperature	Air -60° C / -76° F		1
Glass Temperature	143 - 150° C / 289 - 302° F	150° C	5
ULRTI	Electrical 75 - 130° C / 167 - 266° F	110° C	28
ULRTI	Mechanical with Impact 75 - 130° C / 167 - 266° F	110° C	28
ULRTI	Mechanical without Impact 75 - 130° C / 167 - 266° F	110° C	28
Flammability	UL94 HB		47
Oxygen Index	25 - 26 %	25.9%	7

Optical Properties		*Average*	*Grade Count*
Refractive Index	1.583 - 1.586 / 1.583 - 1.586	1.59	8
Haze	1 - 1.1 %	1%	4
Transmission	Visible 87 - 89 %	87.9%	10

Electrical Properties		*Average*	*Grade Count*
Processing Temperature	260 - 332° C / 500 - 630° F	300° C	57
Rear Barrel Temperature	255 - 266° C / 491 - 511° F	260° C	12
Middle Barrel Temperature	266 - 274° C / 511 - 525° F	270° C	12
Front Barrel Temperature	277 - 291° C / 531 - 556° F	280° C	12
Nozzle Temperature	277 - 288° C / 531 - 550° F	280° C	12
Mold Temperature	65 - 100° C / 149 - 212° F	83° C	54
Drying Temperature	107 - 121° C		