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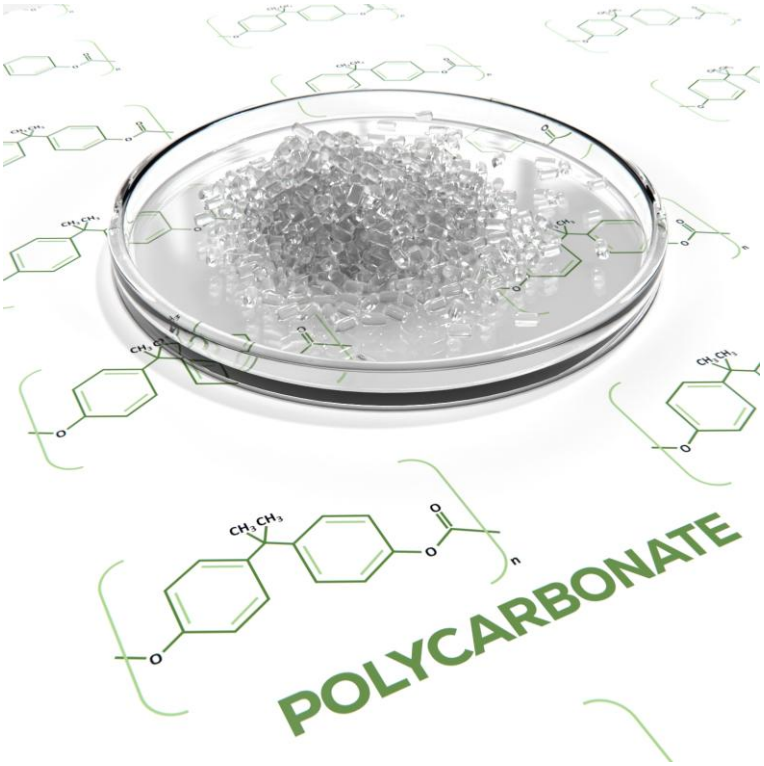
Material Datasheet — PC (Polycarbonate)



Tough engineering thermoplastic with high impact strength, good fatigue resistance, and excellent electrical insulation.

This datasheet is suitable for designers of threaded components and hinge assemblies made from this material.

Key specifications

Item	Value
Continuous Use Temperature	105 °C / 221 °F
UL 94 Flame Rating	V-2
Density	1.19–1.21 g/cm^3

Mechanical properties (typical)

Property	Test method	Typical value	Unit
Tensile strength (23 °C)	ISO 527	60–70	MPa
Tensile modulus (23 °C)	ISO 527	2.3–2.6	GPa
Elongation at break	ISO 527	80–120	%
Notched impact (Charpy)	ISO 179	6–12	kJ/m^2

Thermal properties

Property	Test method	Typical value	Unit
Glass transition temperature (Tg)	ISO 11357	147	°C
HDT (1.8 MPa)	ISO 75	120–135	°C
Thermal conductivity	—	0.20–0.22	W/(m·K)

Electrical properties

Property	Test method	Typical value	Unit
Dielectric strength	IEC 60243	15–25	kV/mm
Relative permittivity (1 MHz)	IEC 60250	2.9–3.1	—
Dissipation factor (1 MHz)	IEC 60250	0.001–0.01	—

Tribology

Property	Test method	Typical value	Unit
Coefficient of friction	—	0.35–0.45	—

Moisture & environment

Property	Test method	Typical value	Unit
Water absorption (24 h)	ISO 62	0.15–0.25	%

Chemical compatibility — high-level guidance

Resistant to many weak acids and alkalis; avoid strong solvents and stress-cracking agents.

Assembly guidance — threaded parts & hinges

• Use a torque wrench and target application-validated torque; account for material creep/relaxation over time.

• Distribute bearing stresses with appropriate washers or flange features.

• For low-friction materials, consider prevailing-torque nuts, thread-locking, or mechanical locking features.

• Avoid sharp stress concentrators near thread run-outs and hinge knuckles; use generous fillets and radii.

• Observe service temperature, environment (chemicals/UV/steam), and moisture conditioning effects before final torque/preload selection.

• Match mating material where galvanic/corrosion or differential expansion could be a factor.