

Polycarbonate (PC)

Technical Datasheet



Service. Quality. Value.

High Impact Strength Engineering Plastic

Typical Applications

- Impact guards
- Safety glasses
- Manifolds
- Automotive parts
- Packaging

Product Description

Polycarbonate (PC) is supplied as a machine grade which is well suited for a variety of application which requires high impact strength. It is an amorphous transparent material which benefits from a combination of good mechanical and electrical properties. The material is readily recyclable and benefits from good machinability and can be machined to close working tolerances. PC GF 20 is an enhanced version of PC, with improved stiffness, tensile strength and a lower coefficient thermal expansion.

Key features

- High impact strength
- Fracture resistant
- Easy to machine to close tolerances
- Good dimensional stability
- Good electrical insulation properties
- Readily recyclable
- Transparent
- High heat resistance

Recyclability

Readily recyclable.

Machinability

Polycarbonates can be machined to close tolerances.

Typical Properties of Stock Shapes

Property	Units	Test Method	PC	PC GF 20
Specific Gravity	-	ASTM D 792	1.2	1.35
Water Absorption 24 hrs	%	ASTM D 570	0.15	0.16
Water Absorption Saturation	%	ASTM D 570	0.35	0.29
Flammability	-	UL 94	HB	HB
Tensile Strength	psi	ASTM D 638	10,000	16,000
Elongation	%	ASTM D 638	75	6
Modulus	psi	ASTM D 638	320,000	860,000
Flexural Strength	psi	ASTM D 790	13,000	19,000
Modulus	psi	STM D 790	340,000	800,000
Notched Izod	ft-lb/in	ASTM D 256	10	2
Rockwell Hardness	-	ASTM D 785	M75	M91
HDT @ 264 psi	°F	ASTM D 648	280	295
Coefficient Linear thermal expansion	in/in/oF	ASTM D 696	3.80 x 10 ⁶	1.5 x 10 ⁶⁵
Dielectric Strength	V / mil	ASTM D 149	380	490
Volume Resistivity	ohm-cm	ASTM D 257	>10 ¹³	10 ¹⁷
Dielectric Constant	-	ASTM D 150	3.2	3.13

Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

UK Service Centres:

Smiths Belfast 02895 908 897
Smiths Biggleswade 01767 604 704
Smiths Birmingham 0121 728 4940
Smiths Bristol 0117 971 2800
Smiths Chelmsford 01245 466 664
Smiths Gateshead 0191 469 5428
Smiths Horsham 01403 261 981

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Smiths Norwich 01603 789 878
Smiths Nottingham 0115 925 4801
Smiths Redruth 01209 315 512
Smiths Verwood 01202 824 347
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Quality & Testing:



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