



# Redeye

PARTS FOR PROTOTYPE AND PRODUCTION • ON DEMAND

# Polycarbonate-ABS (PC-ABS) Acrylonitrile/butadiene/styrene



PC-ABS (Polycarbonate-ABS) is one of the most widely used industrial thermoplastics. PC-ABS offers the most desirable properties of both materials – the superior mechanical properties and heat resistance of PC and the excellent feature of ABS. PC-ABS blends are commonly used in automotive, electronics and telecommunications applications. When combined with FDM (Fused Deposition Modeling) systems, PC-ABS gives you Real Parts™ for conceptual prototyping through design verification through direct digital manufacturing. PC-ABS is an affordable option where strength and rigidity are necessary in conjunction with toughness and temperature tolerance. It produces parts with good surface appeal.

Mechanical Properties <sup>1</sup>	Test Method	Imperial	Metric
Tensile Strength, Type 1, 0.125	ASTM D638	5,040 psi	34.8 MPa
Tensile Modulus, Type 1, 0.125	ASTM D638	265,000 psi	1,827 MPa
Tensile Elongation, Type 1, 0.125	ASTM D638	4.3 %	4.3 %
Flexural Strength	ASTM D790	8,600 psi	50 MPa
Flexural Modulus	ASTM D790	270,000 psi	1,863 MPa
IZOD Impact, notched	ASTM D256	2.3 ft-lb/in	123 J/a
IZOD Impact, un-notched	ASTM D256	6.1 ft-lb/in	326 J/a

Thermal Properties	Test Method	Imperial	Metric
Heat Deflection Temperature @ 66 psi	ASTM D648	230° F	110° C
Heat Deflection Temperature @ 264 psi	ASTM D648	205° F	96° C
Glass Transition Temperature (Tg)	DMA (SSYS)	257° F	125° C
Vicat Softening	ASTM D1525	234° F	112° C
Coefficient of Thermal Expansion	-----	4.10E-5 in/in/F	-----
Melt Point	-----	Not Applicable <sup>2</sup>	Not Applicable <sup>2</sup>

Other	Test Method	Value
Specific Gravity	ASTM D792	1.20
Density	ASTM D792	0.0397 lb/in <sup>3</sup> (1.1 gr/cm <sup>3</sup> )
Rockwell Hardness	ASTM D785	R110
Flame Classification	UL 94	HB 0.85mm
Dielectric Strength kV/mm	IEC 60112	35
Dielectric Constant @ 100hz	IEC 60250	3.1
Dielectric Constant @ 1Mhz	IEC 60250	3.0

**APPEARANCE:** Black

**APPLICATION:** automotive, electronics, toys and telecommunications

**MASTERS:** RTV molds and vacuum forming, vacuum metallization, electroplating, and parts that require snap fits

### BENEFITS of Direct Digital Manufacturing:

- Multiple design iterations -design engineers have the flexibility to modify geometry's while in production, which incurs cost and time penalties when tooling starts
- Bridge manufacturing - rapid manufacturing allows you to start production while waiting for your tool to build
- Jigs and Fixtures - Use additive fabrication as a light-weight, lower cost tool for assembly and manufacturing aids during the production of your parts
- Just-in-time or lean manufacturing - DDM can conserve cash flow for manufacturers
- Alpha and Beta product releases - produce accurate, durable products during the early design validation stages - even if you already committed to tooling

*The information presented are typical values intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. End-use material performance can be impacted (+/-) by, but not limited to, part design, end-use conditions, test conditions, etc. Actual values will vary with build conditions.*

<sup>1</sup> Build orientation is on side edge. <sup>2</sup> Do to amorphous nature, material does not display a melting point.

For more information about Redeye services and materials, contact your representative at +1 866-882-6934 or visit [www.redeyeondemand.com](http://www.redeyeondemand.com)

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