

## PC - ABS

### APPLICATIONS

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 strength and heat resistance of PC and the flexibility of ABS. PC-ABS blends are commonly used in automotive, electronics and telecommunications applications. Additionally, a PC-ABS part is 5 to 60 percent stronger than a part made on previous FDM systems. PC-ABS parts are ideal for conceptual modeling, functional prototyping, manufacturing tools and end-use-parts.

CONDITIONED					
Mechanical Properties <sup>1</sup>	Test Method	English		Metric	
		XZ Axis	XZ Axis	XZ Axis	XZ Axis
Tensile Strength, Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	4,250 psi	4,000 psi	29 MPa	28 MPa
Tensile Strength, Ultimate (Type 1, 0.125", 0.2"/min)	ASTM D638	5,000 psi	4,300 psi	34 MPa	30 MPa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	280,000 psi	250,000 psi	1,810 MPa	1,720 MPa
Tensile Elongation at Break (Type 1, 0.125", 0.2"/min)	ASTM D638	5%	2%	5%	2%
Tensile Elongation at Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	2%	2%	2%	2%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	8,500 psi	6,000 psi	59 MPa	41 MPa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	250,000 psi	225,000 psi	1,740 MPa	1,550 MPa
Flexural Strain at Break (Method 1, 0.05"/min)	ASTM D790	4%	3%	4%	3%

CONDITIONED			
Mechanical Properties <sup>1</sup>	Test Method	English	Metric
		XZ Axis	XZ Axis
IZOD Impact, notched (Method A, 23°C)	ASTM D256	4 ft-lb/in	235 J/m
IZOD Impact, un-notched (Method A, 23°C)	ASTM D256	12 ft-lb/in	842 J/m

Thermal Properties <sup>2</sup>	Test Method	English	Metric
Heat Deflection (HDT) @ 66 psi	ASTM D648	230°F	110°C
Heat Deflection (HDT) @ 264 psi	ASTM D648	205°F	96°C
Vicat Softening Temperature (Rate B/50)	ASTM D1525	234°F	112°C
Glass Transition Temperature (Tg)	DMA (SSYS)	257°F	125°C
Coefficient of Thermal Expansion (flow)	ASTM E831	4.10E-05 in/in/°F	7.38E-05 mm/mm/°C
Melting Point	-----	Not Applicable <sup>2</sup>	Not Applicable <sup>2</sup>

Electrical Properties <sup>3</sup>	Test Method	Orientation	Value Range
Volume Resistivity	ASTM D257	XZ Axis	3.7E15 - 1.8E16 ohm-cm
Dielectric Constant	ASTM D150-98	XZ Axis	2.78 - 2.83
Dissipation Factor	ASTM D150-98	XZ Axis	0.0048 - 0.0054
Dielectric Strength	ASTM D149-09, Method A	XZ Axis	130 V/mil
Dielectric Strength	ASTM D149-09 Method A	ZX Axis	320 V/mil

Other	Test Method	Value Range
Specific Gravity	ASTM D792	1.10
Density	ASTM D792	0.0397 lb/in <sup>3</sup>
Flame Classification	UL94	HB
Rockwell Hardness	ASTM D785	R110
UL File Number	-----	E345258