

PC (polycarbonate)

for Fortus 3D Production Systems

FORTUS
3D PRODUCTION SYSTEMS

A true industrial thermoplastic, PC (polycarbonate) is widely used in automotive, aerospace, medical and many other applications. PC offers accuracy, durability and stability, creating strong parts that withstand functional testing. A PC part manufactured on a Fortus® 3D Production System is 5-60 percent stronger than a part made on previous FDM® systems. It also has superior mechanical properties to ABS and a number of other thermoplastics. When combined with a Fortus system, PC gives you Real Parts™ for conceptual modeling, functional prototyping, manufacturing tools, and end-use-parts.



| Mechanical Properties ¹ | Test Method | English | Metric |
|---|-------------|-------------|-----------|
| Tensile Strength (Type 1, 0.125", 0.2"/min) | ASTM D638 | 9,800 psi | 68 MPa |
| Tensile Modulus (Type 1, 0.125", 0.2"/min) | ASTM D638 | 330,000 psi | 2,300 MPa |
| Tensile Elongation (Type 1, 0.125", 0.2"/min) | ASTM D638 | 5% | 5% |
| Flexural Strength (Method 1, 0.05"/min) | ASTM D790 | 15,100 psi | 104 MPa |
| Flexural Modulus (Method 1, 0.05"/min) | ASTM D790 | 324,000 psi | 2,200 MPa |
| IZOD Impact, notched (Method A, 23°C) | ASTM D256 | 1 ft-lb/in | 53 J/m |
| IZOD Impact, un-notched (Method A, 23°C) | ASTM D256 | 6 ft-lb/in | 320 J/m |

| Thermal Properties ² | Test Method | English | Metric |
|---------------------------------|-------------|-----------------------------|-----------------------------|
| Heat Deflection (HDT) @ 66 psi | ASTM D648 | 280°F | 138°C |
| Heat Deflection (HDT) @ 264 psi | ASTM D648 | 261°F | 127°C |
| Vicat Softening | ASTM D1525 | 282°F | 139°C |
| Glass Transition (Tg) | DMA (SSYS) | 322°F | 161°C |
| Melt Point | ----- | Not Applicable ³ | Not Applicable ³ |

| Electrical Properties ⁴ | Test Method | Value Range |
|------------------------------------|------------------------|----------------------------|
| Volume Resistivity | ASTM D257 | 2.0x10e14 - 6.0x10e13 ohms |
| Dielectric Constant | ASTM D150-98 | 3.0 - 2.8 |
| Dissipation Factor | ASTM D150-98 | .0006 - .0005 |
| Dielectric Strength | ASTM D149-09, Method A | 360-80 V/mil |

| Other ² | Test Method | Value |
|----------------------------------|-------------|------------------|
| Specific Gravity | ASTM D792 | 1.2 |
| Flame Classification | UL94 | HB |
| Coefficient of Thermal Expansion | ASTM E831 | 3.8E-05 in/in/°F |
| Rockwell Hardness | ASTM D785 | R115 |
| UL File Number | ----- | E345258 |