

# FDM Materials //

| MATERIAL                                                                          | ADVANTAGES & CONSIDERATIONS                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">TPU 92A</a><br>(thermoplastic polyurethane elastomer)                 | <ul style="list-style-type: none"> <li>• Accurate elastomer parts with high elongation</li> <li>• Superior toughness &amp; abrasion resistance</li> <li>• Wide variety of applications including flexible hoses, tubes, air ducts &amp; vibration dampeners</li> </ul>                                                                     |
| <a href="#">Antero™ 800NA</a><br>(polyetherketoneketone)                          | <ul style="list-style-type: none"> <li>• High heat &amp; chemical resistance</li> <li>• Low outgassing &amp; high dimensional stability</li> <li>• Excellent strength, toughness &amp; wear-resistant properties</li> </ul>                                                                                                                |
| <a href="#">ULTEM™ 1010 resin</a><br>(polyetherimide)                             | <ul style="list-style-type: none"> <li>• Certified food safety &amp; bio-compatibility</li> <li>• Highest heat resistance, chemical resistance &amp; tensile strength</li> <li>• Outstanding strength &amp; thermal stability</li> </ul>                                                                                                   |
| <a href="#">ULTEM 9085 resin</a><br>(polyetherimide)                              | <ul style="list-style-type: none"> <li>• FST (flame, smoke, toxicity)-certified thermoplastic</li> <li>• High heat &amp; chemical resistance; highest flexural strength</li> <li>• Ideal for commercial transportation applications such as airplanes, buses, trains &amp; boats</li> </ul>                                                |
| <a href="#">FDM Nylon 12™</a><br>(polyamide 12)                                   | <ul style="list-style-type: none"> <li>• Toughest nylon in additive manufacturing</li> <li>• Excellent for repetitive snap fits, press fit inserts &amp; fatigue-resistance applications</li> <li>• Simple, clean process – free of powders</li> </ul>                                                                                     |
| <a href="#">FDM Nylon 12CF™</a><br>(polyamide 12CF)                               | <ul style="list-style-type: none"> <li>• Carbon-filled thermoplastic with excellent structural characteristics</li> <li>• Highest flexural strength</li> <li>• Highest stiffness-to-weight ratio</li> </ul>                                                                                                                                |
| <a href="#">PC</a><br>(polycarbonate)                                             | <ul style="list-style-type: none"> <li>• Most widely used industrial thermoplastic with superior mechanical properties &amp; heat resistance</li> <li>• Accurate, durable and stable for strong parts, patterns for metal bending &amp; composite work</li> <li>• Great for demanding prototyping needs, tooling &amp; fixtures</li> </ul> |
| <a href="#">PC-ISO™</a><br>(polycarbonate – ISO 10993 USP Class VI biocompatible) | <ul style="list-style-type: none"> <li>• Biocompatible (ISO 10993 USP Class VI) material</li> <li>• Sterilize using gamma radiation or ethylene oxide (EtO) sterilization methods</li> <li>• Best fit for applications requiring higher strength &amp; sterilization</li> </ul>                                                            |

### [PC-ABS](#)

(polycarbonate – acrylonitrile butadiene styrene)

- High dimensional stability & colorless transparency
- Five medical approvals including cytotoxicity, genotoxicity, delayed type hypersensitivity, irritation & USP plastic class VI
- Ideal for applications requiring prolonged skin contact of more than 30 days & short-term mucosal membrane contact of up to 24 hours

### [ASA](#)

(acrylonitrile styrene acrylate)

- Build UV-stable parts with the best aesthetics of any FDM material
- Ideal for production parts for outdoor infrastructure & commercial use, outdoor functional prototyping, automotive parts & accessory prototypes

### [ABS-ESD7™](#)

(acrylonitrile butadiene styrene – static dissipative)

- Static-dissipative with target surface resistance of 10<sup>4</sup> ohms (typical range 10<sup>5</sup> – 10<sup>3</sup> ohms)\*\*
- Makes great assembly tools for electronic & static-sensitive products
- Widely used for functional prototypes of cases, enclosures & packaging

### [ABS-M30™](#)

(acrylonitrile butadiene styrene)

- Versatile material: good for form, fit & functional applications
- Familiar production material for accurate prototyping

See individual material spec sheets for testing details.

\*\* Actual surface resistance may range from 10<sup>9</sup> to 10<sup>6</sup> ohms, depending upon geometry, build style & finishing techniques.