• Fortron® polyphenylene sulfide (PPS)
  Often chosen over metals and thermosets, it's a dimensionally stable, hard and rigid polymer that withstands temperatures to 200°C. It has excellent chemical, creep and moisture resistance and is flame retardant.

• Celstran®, Compel® and Factor long fiber reinforced thermoplastics (LFRP)
  Provide superior mechanical integrity in large parts and structural profiles. Long fibers of glass, carbon, aramid or stainless steel are chemically coupled to a base resin to offer excellent dimensional stability, impact strength, rigidity and fatigue resistance.

• Celstran® continuous fiber reinforced thermoplastic (CFR-TP)
  For the easy processing of TPS with the outstanding mechanical and thermal performance of composites, this material can extend the range of physical and mechanical properties attainable with reinforced thermoplastics by up to an order of magnitude.

• Impel® thermoplastic polyester (PET)
  Outstanding physical properties and superior thermal and chemical resistance, with the added ability to support higher temperature exposure.

• Vandar® thermoplastic polyester alloys (PBT)
  Combines high ductility and good stiffness with the excellent chemical and thermal resistance of polyester.

• GUR® ultra-high molecular weight polyethylene (UHMW-PE)
  Excellent wear resistance, extremely high notched impact strength, low friction loss values, high energy absorption at high stress rates, excellent chemical resistance, very good noise reduction, biocompatibility and light weight (0.910 g/cm³).

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Whatever your product challenge, chances are a Celanese polymer can help you meet it. Our engineered materials help designers reduce component weight, consolidate parts and meet tough specifications. Beyond high performance thermoplastics, we offer critical design and engineering support throughout the product development cycle. It's no wonder manufacturers at every level turn to Celanese for the technical solutions they need.
Performance Characteristics

**Thermal**

Relative Thermal Index: Air temperature at which a molded part, with no load, can withstand 100,000 hours and retain 50% of its tensile strength.

Heat Deflection Temperature: (ASTM D-648) Temperature at which a polymer sample deflects a certain amount under heat and load. Current ASTM standards specify that this heat deflection temperature test be conducted at 66 psi (45 MPa) and 264 psi (1.8 MPa) stress in the specimen.

**Impact**

Impact tests carried out on engineering thermoplastics should be complemented by practical testing of molded components. Tool impact (ASTM D-256) measures notch sensitivity. Gives value at which plugging occurs.

Ultimate Tensile Strength: (73°F/23°C) The peak stress on the engineering stress-strain curve is known as the ultimate tensile strength. Test provides a guide to the material's stiffness and rigidity.

Flexural Modulus: (73°F/23°C, ASTM D-790) The ratio, within the elastic limit, of the applied stress to a test specimen in flexure to the corresponding strain in the outermost fibers of the specimen. Test provides a guide to material's stiffness and rigidity.

Dielectric Strength: A measure of the voltage required to puncture a material, expressed in volts per mil of thickness. In the test, the higher the value, the greater the resistance to electrical breakdown.

Chemical Resistance: Highly dependent on application, closely linked with time and temperature exposure. With extreme situations or chemicals in combination, additional information should be requested. Crystalline nature of most products reviewed improves their resistance to stress cracking.

Please contact your Celanese representative for information on Celstran® LFRT. Characteristics will vary widely due to Celstran's ability to combine with many base polymers.