SOLVAY

asking more from chemistry®

Spire® Ultra Polymers

for Attachments & Flight System Components

SPECIALTY POLYMERS

Lightweight, Corrosion-Free Solutions

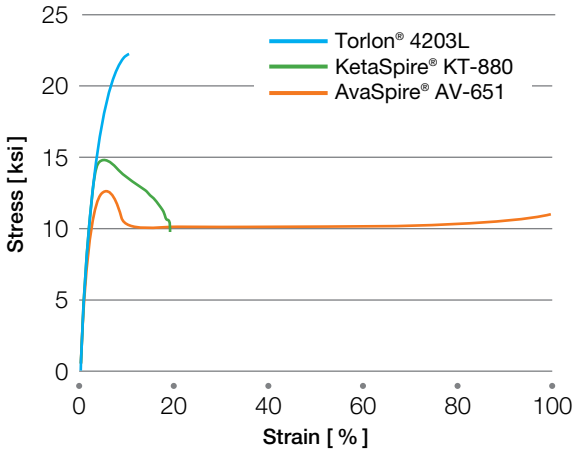
Spire® Ultra Polymers offer best-in-class properties for long-life performance in critical applications. They exhibit inherent FST properties, high strength-to-weight mechanical performance, and excellent resistance to chemicals commonly used in the aerospace industry. This helps reduce operational costs through improved fuel economy and maintenance costs due to their non-corrosive nature. They can be easily fabricated using traditional melt processes and machining. Many of these materials are qualified by aircraft manufacturers.

Torlon® polyamide-imide (PAI) provides exceptional wear resistance in dry and lubricated environments and retains its toughness, high strength and high stiffness up to 275 °C (525 °F). It exhibits outstanding creep and chemical resistance – including strong acids and most organics – and is ideally suited for harsh environments.

KetaSpire® polyetheretherketone (PEEK) offers excellent strength, stiffness and fatigue resistance along with some of the best chemical resistance among plastics. These superlative properties combine with its continuous-use temperature of 240 °C (464 °F) to replace metal in some of the most severe end-use environments.

AvaSpire® polyaryletherketone (PAEK) is a versatile family of polymers that is tailored to provide new and unique combinations of performance and value. The AV-600 Series delivers a range of distinctive performance attributes with some grades offering more attractive economics when compared to PEEK. The AV-700 Series offers comparable performance to PEEK at up to 30 % lower cost.

Figure 1: Stress vs. strain of unfilled resins at 23 °C



Solvay's aerospace-qualified ultra polymers allow design engineers to optimize component design for maximum strength, maximum toughness or a balance of both.

Key features

- Excellent mechanical strength
- Creep and corrosion resistance
- High temperature performance
- Very high ductility
- Broad chemical resistance
- Inherent flame retardant properties
- Outstanding friction & wear properties
- Manufactured into tight-tolerance parts

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