

Technical Bulletin 21: K-Spec® Fiber Characteristics vs other Fibers

K-Spec core yarn strength retention is based on test results of components at 65°C/150°F (or less) for 6 months. K-Spec has a 100% strength retention when exposed to: age, rot and mildew and sunlight.

Chemical Resistance

K-Spec is generally resistant to most common chemicals. Resistances in this chart are based on common concentrations. Some chemicals on this chart (including those rated as “Excellent”) can damage the sling cover. Contact Slingmax for more information when using in environments with elevated concentrations of chemicals and/or temperatures.

| Chemical | Resistance |
|----------------------------------|------------|
| Hydrocarbons | Excellent |
| Hydraulic Fluid | Excellent |
| Crude Oil | Excellent |
| Gasoline | Excellent |
| Kerosene | Excellent |
| Diesel Fuel | Excellent |
| Mineral Oil | Excellent |
| Acids | Excellent |
| Sulfuric Acid | Excellent |
| High Concentration Sulfuric Acid | Fair |
| Hydrochloric Acid | Excellent |
| Phosphoric Acid | Excellent |
| Boric Acid | Excellent |

| Chemical | Resistance |
|-------------------------------------|------------|
| Alkalis | Excellent |
| Chlorine bleach | Poor |
| Sodium Hydroxide | Fair |
| High Concentration Sodium Hydroxide | Poor |
| Other | Excellent |
| Salt Water | Fair |
| Ammonia | Fair |
| Most Solvents | Excellent |
| Ethanol | Excellent |
| Methanol | Excellent |
| Toluene | Excellent |
| d-limonene | Poor |

Fiber Characteristics

| | K-Spec Core Yarn | Aramid | HMPE | LCP | Polyester | Nylon |
|------------------------------|------------------|------------------|-----------------|-----------------|-----------------|-----------------|
| Mechanical Properties | | | | | | |
| Tenacity (grams / denier) | 31.5 | 20 – 29 | 25 – 41 | 23 – 29 | 7 – 10 | 7.5 – 10 |
| Elongation at break % | 3.6 | 1.5 – 4.6 | 2.5 – 3.9 | 3.3 – 3.6 | 12 – 18 | 15 – 28 |
| Moisture Regain % | 0.1 | 1.5 – 6.5 | 0.0 | 0.1 | 0.5 | 4.0 – 6.0 |
| Specific Gravity | 1.11 | 1.39 – 1.47 | 0.97 | 1.40 | 1.38 | 1.14 |
| Creep Resistance | Excellent | Very Good | Fair | Excellent | Good | Fair |
| Thermal Properties | | | | | | |
| Maximum Temperature | 180° F 82° C | 300 °F 150° C | 158° F 70° C | 180° F 82° C | 194° F 90° C | 194° F 90° C |