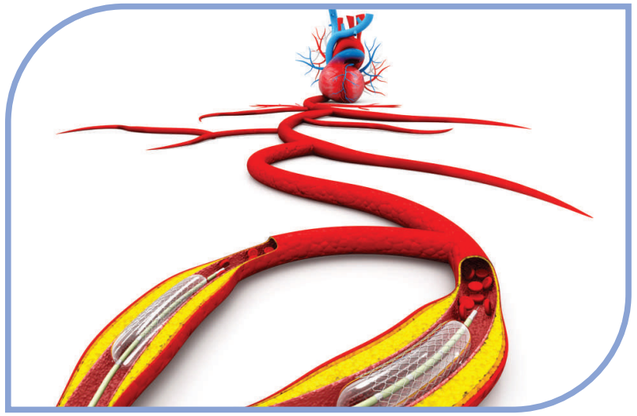
ReZilient TPEs – Customizable Elastomers Engineered for your Application

Compounding Solutions is well known for developing custom compounds that are engineered to meet the specific requirements of demanding applications. Of the different polymer types that Compounding Solutions formulates with, thermoplastic elastomers, in particular, offer some of the broadest design capabilities. Our ReZilient TPEs can be formulated to achieve high or low extremes of critical material properties. ReZilient TPEs offer material solutions for a variety of applications, ranging from low-cost general-purpose elastomers for industrial use to specialty compounds for high-performance applications. Compounding Solutions invests in ongoing research and internal studies and maintains close relationships with our raw material suppliers to offer leading-edge material technologies. For cost sensitive applications, Compounding Solutions has put in place the infrastructure to purchase high volumes of raw material inputs to provide low-cost products.

ReZilient TPEs are designed around styrenic block copolymers (SBCs), such as styrene-ethylene/butylene-styrene (SEBS), and are customized with modifying resins, additives, fillers, pigments, stabilizers, etc. Depending on performance criteria, Compounding Solutions can also formulate ReZilient TPEs with SEPS, SEEPS, SBS, and SIS polymers.



General design considerations for ReZilient thermoplastic elastomers are listed below:

- Appearance – Colorable, transparent (such as for fluid monitoring), matte, gloss, % haze, etc.
- Biocompatibility – Plasticizer free, USP or ISO compliant, free of animal-derived components, etc.
- Radiopacity – To be visible under x-ray, radiopaque filler type and loading can be tailored as needed
- Bondability – Inherently thermally bonds to polypropylene, but can be designed to overmold onto polar engineering resins (such as for soft touch handles/grips).
- Chemical Resistance – Resistant to most common cleaners and household chemicals
- Sterilization – EtO, gamma and x-ray irradiation, e-beam.
- Stabilization – Heat, antioxidants, UV, or gamma stabilization packages
- Product Environment / Operating Range – Low temperatures, direct sunlight, etc.
- Processability – Injection molding or extrusion (considering factors such as viscosity, cycle time, melt strength, etc.)

In addition to the considerations listed above, ReZilient TPEs can be customized in the following ways for application specific property requirements:

- Durometer ranging from 5 Shore A (soft, gel-like) to 75 Shore D (hard and rigid)
- High or Low Elongation
- Tensile Strength and Tensile Modulus
- Tensile Set / Elastic Recovery (balloons, straps, bands, etc.)
- Flexural Strength and Flexural Modulus (flexible tubing, hubs, structural components, etc.)
- Tear Strength (toys, footwear, film, packaging, etc.)
- Compression Set (gaskets, seals, plunger stoppers, peristaltic pump tubing, etc.)
- Kink Resistance (tubing, fPVC offsets, etc.)
- Static Dissipative or Electrically Conductive (ESD footwear, conductive balloons, etc.)
- Abrasion Resistance (footwear, grips, contact surfaces, etc.)
- Coefficient of Friction (ranging from soft-touch surfaces to high tack)
- Vibration Dampening (to use in high speed automated equipment, recoil pads, protective cases, etc.)
- Puncture Resistance (footwear, dog toys, etc.)
- Barrier Performance (water vapor and oxygen barrier, sound barrier, etc.)

All ReZilient TPEs are latex and PVC free and manufactured to meet the most demanding quality standards in the industry. Contact us today to find out how ReZilient elastomers can be customized for your needs!