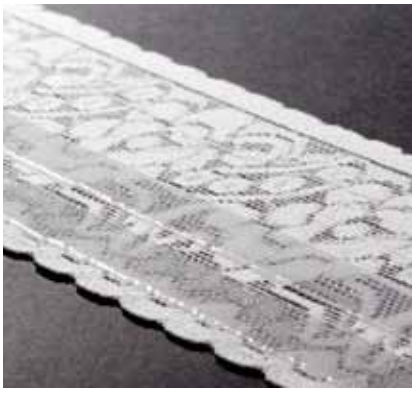
Product Digest

this month's topic Materials

Silicone Rubber Grades Are Formulated without Tin



Two silicone rubber grades for textile coating, Elastosil E91 and Elastosil E92N, produce soft elastomers with notable nonslip properties. They use a catalyst system that is formulated without tin, which meets the organotin limits of the Öko-Tex Standard 100. The silicon coatings are flowable products that are easy to process, with viscosities that wet textile surfaces without penetrating their weave. Elastosil E91 can withstand higher processing temperatures and is ideal for processing in steam ovens. Elastosil E92N is optimized for rapid vulcanization of the rubber at room temperature, and is also exceptionally transparent.

Wacker Chemie AG
www.wacker.com

Additive Boosts UV Protection of Waterborne Coatings

The additive Hostavin 3330 disp. XP is a highly loaded water-based dispersion of a triazine-class UV absorber. Its active UV absorber content of 52% provides ultraviolet light protection comparable to that of conventional solvent-borne systems. The additive has high thermal stability and durability for prolonged service life. As a result, it is suitable for use in clear and pigmented coatings for exterior wood protection, as well as for industrial and automotive coatings. Hostavin 3330 disp. XP has excellent compatibility with existing systems and is safe to handle.

Clariant
www.clariant.com

Adhesive System Cures upon Exposure to LED Light

The LED401 adhesive, sealant, coating, and encapsulant system cures tack-free in 15–30 s upon exposure to a 405-nm-wavelength light source. LED401 is optically clear and is a suitable choice for applications with heat-sensitive substrates. The one-part system has a high viscosity range of 100,000–150,000 cP, yet it remains flowable and easy to handle. It bonds well to most plastics, metals, and ceramics, and has superior adhesion to glass, polycarbonates, and acrylics. LED401 offers excellent resistance to water and a variety of chemicals, including many acids, bases, and oils. It has high electrical-insulation properties with a volume resistivity exceeding 10^{14} ohm-cm, and has good dimensional stability over the wide temperature range of –60°F to 250°F. The adhesive system has a shelf life of six months at room temperature without exposure to light, and is available in syringes, pints, quarts, gallons, and 5-gal containers.

Master Bond, Inc.
www.masterbond.com

Glass Fiber Boasts Unprecedented Tensile Modulus

The S-3 UHM glass fiber has a high tensile modulus of 99 GPa. Produced with proprietary Modular Direct Melt (MDM) technology, the glass fiber utilizes a formulation of S-Glass raw materials for enhanced mechanical properties. The new material allows designers and manufacturers to employ glass fiber reinforcement in areas previously limited to other types of fibers. The high tensile modulus of the fiber does not diminish any of its other important properties, such as high electrical and thermal insulation, high impact absorption, and low coloration of the resin system. S-3 UHM is available in a range of formats, including yarns, rovings, and chopped fibers.

AGY
www.agy.com

Conductive Inks Provide Cost Savings over Silver-Based Materials

Three new screen-printed conductor materials for the growing printed-electronics market have been designed to help offset the rising cost of silver and reduce the impacts of silver market fluctuations — manufacturers can reportedly realize cost savings of more than 20%. The PE815, PE825, and PE850 conductive inks have low resistivity. PE825 and PE850 are designed for use with standard thermal-curing techniques. PE815 is designed for use with photonic curing equipment for low-temperature processing and high-speed production. All three products are suitable for use in printed electronics applications such as membrane switches, radio-frequency identification (RFID), and electroluminescent lighting.

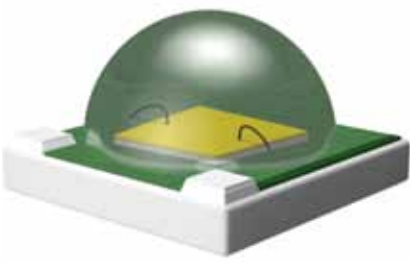
DuPont Microcircuit Materials (MCM)
www.mcm.dupont.com

Resin Is Designed for Hollow-Fiber and Flat-Sheet Membrane Products

Kynar MG 15 is a semi-crystalline, high-viscosity polymer of polyvinylidene difluoride with high physical strength and chemical resistance. It is suitable for microfiltration and ultrafiltration membranes for water-filtration processes. Designed specifically for hollow-fiber and flat-sheet membranes, the resin has excellent chemical resistance to chlorine, bromine, acids, mild bases, peroxides, and alcohols. It is soluble in selected solvents and is suitable for solution-processing applications.

Arkema, Inc.
www.arkema.com

Optical Encapsulants Raise the Quality Bar for Next-Generation LED Designs



Five two-part, heat-curable phenyl silicone optical encapsulants offer increased reliability, enhanced silver-corrosion resistance, and improved durability for demanding light-emitting diode (LED) designs. The OE-6662 and OE-6652 optical encapsulants have Shore D 64 and Shore D 59 hardness, respectively. The improved gas-barrier performance exhibited by both grades protects delicate silver-plated LED electrodes from sulfur and extends the lifetime of advanced LED designs. The OE-7620, OE-7630, and OE-7640 optical encapsulants have Shore D 26, 29, and 43 hardness, respectively, which provides enhanced mechanical protection for LED packaging, and improved thermal- and photo-stability. All five of the encapsulants are suitable for conventional dispensing and over-molding processes.

Dow Corning
www.dowcorning.com