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Polymer Manufacturer Holds Up Under Pressure

Author:

Shana Leonard

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Basement chemistry experiments are often a recipe for disaster. But in the case of Dr. W.R. McElroy, they actually yielded a unique, ultrasoft viscoelastic polymer that became the foundation of a successful business.

Founded by McElroy in 1970, **Action Products** (Hagerstown, MD) put the synthetic polymer, dubbed Akton, to use in the development of wheelchair cushions and bed pads, and eventually



Akton viscoelastic polymer, manufactured by Action Products, provides pressure reduction properties, as well as shock absorption and vibration damping for medical applications.

expanded into the fabrication of pressure-relieving products for the operating room. “We made a lot of positioners for the operating room table and the pads that go on the operating room table itself,” says Michael Bredal, vice president of business development. “Through clinical studies done independently by OR nurses, we were able to show how effective our pads were at preventing pressure ulcers compared with regular foam mattresses, and that was really our breakthrough.”

Vertical pressure and shear forces, friction, temperature, moisture, and other factors can contribute to the development of pressure ulcers, or bedsores as they are commonly known, in immobile patients. Although typically preventable, pressure ulcers can be hard to treat and even

fatal if they develop. Action Products's Akton polymer-based pressure-relieving pads and positioners are designed to minimize the opportunity for these ulcers. "Shear forces have been reduced by making the surface movable," Bredal notes. "When the body moves, the material moves, versus foam, which gives you some resistance." He adds that the Akton polymer absorbs heat almost at the same rate that the body produces it and is also more durable than foam.

Although the company makes its own end-use products from the Akton polymer, it can also provide the material to medical device OEMs. And the versatile, synthetic rubber also features desirable properties beyond pressure reduction, according to Bredal. For example, having proven successful in a sleep apnea mask and as a protective, tissue-equivalent phantom material for radiation therapy, the polymer has potential for use in a variety of medical products. Properties and characteristics of the nonconductive material include shock absorption, vibration damping, softness, durability, heat reduction, pliability, and shape retention.

To accommodate OEM partners, Action Products maintains engineering and R&D departments and has 3-D CAD modeling, SLA and CNC machining, moldmaking, and lean manufacturing capabilities. "We know that there are other applications out there," Bredal states, "and we enjoy working with other companies to realize the applications they are working on."

Action Products

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