## FOOTWEAR TECHNOLOGY: DOW ELASTOMERS

EVA-based foams have dominated the midsole materials market for many years. Dow Elastomers believes it can now offer footwear brands and athletic shoe consumers something extra if they use olefin block copolymers instead of, or in addition to, EVA, to provide extra comfort and resilience.

# Battle for the midsole

Chemical company Dow has announced that its elastomers division is introducing its Infuse olefin block copolymers (OBCs) for use in athletic shoe midsoles. Infuse OBCs help improve rebound, compression set, comfort and dimensional stability while providing a lightweight material option, Dow Elastomers said on making the announcement, helping brands and manufacturers increase the performance, safety and comfort of a shoe.

"Midsoles dictate the life of a shoe," the company claims. "They protect the runner's foot, absorbing shock from jumping and running during a workout, lessening the impact and stress on the body. The midsole also serves as the centre of stability for an athlete, preventing the foot from rolling inward or outward, which can lead to pain and injury."

### Better comfort, more durability

Global strategic marketing manager for Dow Elastomers, Michael Shoemaker, says the company has been observing growing demand for athletic shoes with higher-performance midsoles. He explains: "New technology applications, like blending Infuse OBCs with ethylene vinyl acetate (EVA) for the shoe midsole, are helping meet increased consumer demands for improved performance, comfort and durability in a market where midsole foams have traditionally provided a minimum level of benefits in midsole comfort."

Mr Shoemaker says that, compared to conventional EVA-based midsole foams, Infuse can provide improved resilience with similar hardness, more stable performance over a broader temperature range, and reduced shrinkage and compression set at elevated temperatures. The technology can also drop into

*Consumers are demanding more than low-cost materials in their shoes today.*

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existing foam processes with minor adjustments by the manufacturer, eliminating the need to retool or alter the production process, Dow Elastomers insists.

## As consumers become more sophisticated

For Michael Shoemaker, EVA has been dominant in midsole construction for so long primarily for cost reasons. "It is a low-cost, lightweight thermoplastic foam," he explains. "As athletic shoe consumers become more sophisticated, they have begun to demand more than just lightweight performance from their athletic shoe experience, creating opportunities for materials like Infuse that can provide the lightweight performance but in addition features such as better comfort and long-term durability."

What has convinced Dow Elastomers that this is a good time to challenge the dominance of EVA is the market. "It is telling us that consumers are demanding more than low price from their athletic shoes and are seeking technology that improves their overall experience," the Dow Elastomers marketing manager says. "Several studies have shown us that technology and performance are becoming more important in the consumer athletic shoe buying decision."

## Strong enough bonds

Some footwear manufacturers have expressed concern that bonding can be difficult with olefins. Michael Shoemaker says he prefers to characterise bonding as "different" with olefins rather than difficult. "High-OBC content athletic shoe midsoles are being produced and sold commercially today," he says, "so it is not a barrier, technically or economically. Success just takes an understanding that bonding has to be approached differently and with a willingness to change the systems companies have in place today for high-EVA content midsoles." But he makes the point again that when OBCs such as Infuse are used in a blend, with EVA as the major component, they can drop into current EVA bonding systems.

*This image shows where Infuse can go to create a new generation of midsoles.*

*Dow Elastomers*

It's something of a "best-kept secret", Mr Shoemaker claims, that performance midsoles containing Infuse have been coming onto the athletic footwear market for about two years now, including, he says, in "some of the latest, most exciting, new, high-performance athletic shoes" launched during this period. Dow Elastomers now wants to raise awareness of the technology and says some of the footwear brands who have been early adopters are preparing to help it spread the word about the changes that are afoot in the battle of the midsole.

There is a clear contrast here with the recent messages consumers have heard about barefoot running and minimalist footwear, a trend that Michael Shoemaker insists has not gone away. Consumers still value a lightweight, small-package-space athletic shoe, he says, but, in addition, are now demanding better performance in energy management, something he says was missing from some of the extreme minimalist designs. "We believe that the winner in the market will be the shoe that gives the consumer the best of both worlds," he concludes, "and that is what we are offering the market with Infuse."