

Soft by design

Thermoplastic elastomer (TPE) compounds have become an innovative design tool in many diverse consumer end use applications. APN reports

The new Wilton Products rolling pin is made completely of plastics, where a GLS TPE is used to provide soft touch and a non-stick, easy-clean surface (extreme right), while three different Kraiburg TPE grades from their Thermolast K product group to ensure hygiene and tight sealing, a non-slip base and a pleasant feel for the Kor One water bottle (below)



With the reusable Kor One water bottle (described by its manufacturers as a "hydration vessel"), American firm Kor Water (www.korwater.com) aims to both improve the aesthetics of a reusable bottle and launch a new movement in environmental protection, engaging consumers to consider the environmental impact of drinking water from disposable packaging.

Kor Water says the bottle design developed by RKS Design embodies the "organic beauty of blown glass" and is ergonomically driven, with an integrated handle and thumb-release cap that allow for easy, one-handed operation.

The 750ml Kor One bottle is made from clear Tritan copolyester resins by Eastman Chemical (www.eastman.com) while three different injection moulding TPE grades by Kraiburg TPE (www.kraiburg-tpe.com) were used to achieve hygiene and tight sealing along with a good grip feel.

Kraiburg worked with Kor Water to develop several custom-engineered TPE compounds on this commercial application, in which the Kor One bottle marks the beginning of "a complete redesign of the hydration experience" to deliver sustainable alternatives to the predominant PET bottled water packaging.

The TF3THT compound used in the cap seal ring helps to ensure no leakage when the cap is closed, while the cap insert itself is made of a TF8THT compound rigid enough to keep the container securely closed but also flexible enough for easy opening.

A further compound selected from the Thermolast K product line is used at the bottle base for stability, its high coefficient of friction reducing slippage.

Wilton Products is utilising the high performance characteristics of TPE materials in a kitchenware application, specifically for its new rolling pin made completely of plastics.

A bronze prizewinner in the 2008 International Design Excellence Awards, the unique design of Wilton's utensil features bright yellow non-stick surfaces and non-slip removable handles.

The Dynaflex G2755 thermoplastic elastomer (TPE) developed by GLS, a business of specialty compounder PolyOne (www.polyone.com), is used to provide a soft touch feel and a non-stick, easy-clean surface ideal for the rolling pin barrel.

The custom-made TPE material takes the stickiness out of the rolling dough and puts the messy clean-up in the dishwasher, contributing to the performance and safety of the rolling pin, which is manufactured in Asia.

"The GLS TPE team was instrumental in the creation of our award-winning rolling pin," says Karen Swinford, senior vice president of Wilton Products. "Because PolyOne has a global presence, they were able to provide local technical resources in Asia, where the product is made. The company worked tirelessly to find the perfect TPE for this application, and helped us meet a very tight production deadline, just two and a half months after material selection."

The GLS Dynaflex G2755 TPE is said to impart no taste or smell, and is entirely safe for food contact, having met the FDA's milk, oil and water direct contact criteria. The high flow of the Dynaflex material is necessary to mould the long, tubular sleeve that is attached on top of the plastic barrel. The seamless design of the sleeve prevents any blemishes from occurring as the dough is rolled out.

