



ALIGNING PERFORMANCE AND SUSTAINABILITY

Engaging the Plastics Value Chain to Deliver

When Lion Corporation Thailand Limited (“Lion”) set out its sustainability vision for 2030, it was underpinned by its corporate purpose of ReDesign—making a difference in everyday lives by redesigning habits. This concept of ReDesign proved poignant when the company looked to bring the [Systema Slim Teq](#) toothbrush to Thailand.

The Product

The Systema Slim Teq toothbrush combines the best of what Lion offers to the market: contributing to the overall health of the markets it serves by supporting better habits and by caring for the environment. The toothbrush’s intentional design uses a slim head size and handle, not only to enhance its product image, but also to help bolster its ability to access hard-to-reach areas of the mouth, ultimately providing a more thorough mouth clean and contributing to better overall oral hygiene for its users.

In addition, the environmental impact of the toothbrush was considered in the design process. Because of its smaller design, less overall plastic was needed to develop the brush. Thirty-five percent less plastic went into the Systema Slim Teq head part, compared to previous Systema brushes at head part, creating a lasting impact by dialing into reduction strategies in line with [Lion Thailand’s sustainability platform](#) of promoting environmental initiatives for a healthy planet.

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The Challenge

Bringing the Systema Slim Teq to Thailand was the next step for the Lion Thailand team, but the market introduction hinged on selecting the right plastic resin. It was important to source a regionally available resin to make the supply chain feasible—and sustainable—for a Thai launch.

Given the specific performance standards, downgauging the conventional toothbrush design was a novel concept. The plastic toothbrush handle had to have excellent stiffness given its extremely thin design, 40% thinner than conventional models, and to ensure it withstood rigorous brushing. The resin also had to be strong enough not to crack when the brush bristles were punched into the base of the handle during the manufacturing process.

Initially, Lion Thailand tried several resins, but none of these matched the performance expectations of the team. The company's belief in providing first-rate customer experiences across health, comfort, and cleanliness while protecting the environment meant Lion Thailand couldn't bring this product to market without the right resin supplier.

The Solution

Lion Thailand came to IRPC and Milliken & Company after its trial runs with alternative resins failed due to inadequate stiffness or breakage issues. IRPC's DURA-PRO line, enhanced with Milliken's Hyperform® additive, presented as an ideal resin to make this toothbrush design a reality in Thailand. [POLIMAXX® DURA-PRO](#) is the stiffest homopolymer in the range, integrated with

high heat stability, fast cycle time, and excellent dimensional stability, and the resin delivered the optimal balance of stiffness and toughness.

After initial tests in 2022, Lion Thailand exclusively sourced POLIMAXX® DURA-PRO to manufacture the Systema Slim Teq toothbrush.

The Results



A novel toothbrush concept that:

- uses less plastic
- incorporates highly recyclable plastic
- reduces manufacturing CO2

Lion's novel toothbrush concept proved to be a multi-faceted sustainability success:

- Launching the Systema Slim Teq toothbrush delivered on [Lion Thailand's policy of promoting environmental initiatives for a sustainable planet](#), given its significant plastic use reduction.
- Utilizing POLIMAXX® DURA-PRO product led to supply chain and manufacturing CO2 reductions—in line with both Lion Thailand's and IRPC's work to reduce CO2 emissions.
- Finally, using Milliken's Hyperform additive allowed for a highly recyclable resin to be used instead of less-recyclable plastics, contributing to the [overall circularity of plastics](#) within the market.

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The collaboration between Lion Thailand, IRPC, and Milliken fully engaged the value chain to deliver a unifying promise of innovation, sustainability, and performance-driven solutions.

Learn more about Milliken's range of additive solutions that enhance and redefine plastic's capabilities in the marketplace by visiting chemical.milliken.com.



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