

## Press release

November 17<sup>th</sup> 2009

### Hot filling: The world's lightest bottles

**Less than 19 grams for 0.5 L: Sidel beats the world record for the lightweighting of hot-fillable PET bottles and designs innovative shapes thanks to the development of new technical solutions. Discover the new models *Skyward*<sup>TM</sup> and *Curvy*<sup>TM</sup>.**

Its esthetics combined with technical prowess. A long silhouette with cylindrical and square shapes, an elegant belt and just four panels: that's *Skyward*<sup>TM</sup>. There's also *Curvy*<sup>TM</sup> with its curves, spirals and a twisted back that serves as a support beam, without panels. These two small 0.5-L bottles have undergone a revolution: they weigh only 18.9 g and their design is a real breakthrough for the shape of hot-fill bottles, which traditionally have six or eight panels and often look exactly like each other. Sidel has just developed innovative technical solutions that extend the limits of lightweighting for heat-set packaging.

Bottle lightweighting has been made possible by complete redesign of the neck, body and base, conducted by the Sidel Packaging & Tooling Center. The 28-mm amorphous (non-crystallized) neck has been made lighter, and it accepts a standard cap for carbonated soft drinks. The base has also been revised, making it stiffer while also using fewer raw materials. The new geometric structure of the bottle body compensates for deformations due to vacuum absorption after cooling. The *Skyward*<sup>TM</sup> bottle has a square section over a cylindrical one, an anti-ovalization waist and a rigid label area at the base. The rigidity of the *Curvy*<sup>TM</sup> bottle is obtained by an anti-ovalization waist in the top third of the body, the heel and the base, the twisted shape that acts as support beams and the succession of curves that absorb the vacuum while also making the bottle easier to grasp.

Good material distribution is ensured by optimization of the bi-orientation rates and preform thickness ratios, which are perfectly suited to the bottle shape.

### **1,800 bottles per hour per mold**

In addition, the outstanding blow molding speed of 1,800 bottles per hour per mold with a standard HR process has been obtained due to heating optimization with the SBO Universal<sup>TM</sup> range. Its principles, which make all the difference in terms of process: improved blow molding rates, optimized cycle times, greater induced crystallinity thanks to the stretching rate, 100% heating regulation inside the inner walls ensuring perfect spherulitic crystallinity of the bottle, which at this speed remains in the oven for a shorter time.

Sidel's bell nozzle also enables the blowing of lighter, amorphous necks without deforming them (isobaric pressure around the neck). Finally, the excellent heat conduction of F300 aluminum molds helps produce bottles at this high output.



### **About the Sidel Group**

With more than 30,000 machines installed in 190 countries and with annual sales of 1.19 billion euros in 2008, the Sidel Group is one of the world's leaders in beverage packaging solutions: water, carbonated soft drinks, milk, sensitive beverages, oils, beer and alcoholic beverages. Sidel has production sites in 13 countries as well as sales and service offices in 30 countries. Around the world, the Group's 5,550 employees provide customers with complete bottling solutions, including package design, line engineering, packaging machines and related services. To learn more about Sidel, come visit our Website: [www.sidel.com](http://www.sidel.com).

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