

## Aveda

**Product:** Shampoo and other haircare products

**Overview:** In 2001, Aveda redesigned the high-density polyethylene (HDPE) bottles for its entire haircare line. In addition to updating the shape and artwork of the bottles in the product line, the company increased the use of post-consumer recycled content. The new design uses smaller caps. Further improvements are planned.

**Before:** Aveda's shampoos and many of their other haircare products are sold in the following sizes: 50 ml, 200 ml, 250 ml, 500 ml, and 1000 ml. The original bottles were co-extruded<sup>1</sup> HDPE, with a layer composed of post-consumer recycled material sandwiched between inner and outer virgin resin layers. The overall fraction of post-consumer recycled content was 45%. Many of the bottles in the line were unpigmented. The artwork was silkscreened directly on the bottle. The bottles had a virgin polypropylene (PP) cap.

**After:** All HDPE bottles in the line were replaced by co-extruded HDPE bottles in which only the innermost layer is made of virgin material. The bottles now have 76-83% post-consumer recycled content (percentages vary among the sizes). The new bottle design resulted in slight weight changes (decreases of approximately 2.5% in the 50 ml, 200 ml, and 250 ml sizes; an increase of 10%<sup>2</sup> in the 1000 ml size)<sup>3</sup>. The redesigned bottles are also silkscreened. The new caps are made of virgin PP but have been reduced in size and weight (weight reductions vary by cap size but average 11%). In addition, Aveda is planning a transition to 25% post-consumer recycled content in all PP caps.



*Original and redesigned bottles.*

**Environmental Attributes:** The redesign of the bottle represents a dramatic increase in the proportion of post-consumer content used, resulting in an avoidance of 143 tons of virgin HDPE annually. Aveda also projects that 9 tons of virgin PP will be avoided annually as a result of the reduced cap weight. Their planned substitution of 25% post-consumer recycled resin in the caps will avoid the use of another 15 tons of virgin PP annually.

Both the old and new bottle versions are optimized for recycling: they are monomaterial<sup>4</sup> HDPE, a material that is recyclable in most US communities (HDPE is the same material that is used in milk jugs). Although the cap resin does not present significant contamination issues for the HDPE recycling process, the fully detachable caps and the use of silkscreening instead of labels reduce the proportion of contaminants in the HDPE material stream. Furthermore, most of the bottles in the line are unpigmented; the colored bottles have been designed to minimize the quantity of pigment for best compatibility with recycling (and to optimize the value of the recycled material).

<sup>1</sup> Coextrusion is a production method by which a multi-layered container is formed in a single process. In this case, it was used to create a container in which the post-consumer recycled resin will be separated from the contained product by a layer of virgin resin, maintaining product purity.

<sup>2</sup> Although the 1000 ml package increased in weight, it still has the lowest package-to-product ratio of the line: 0.069 g/ml (compared with a range from 0.0858 g/ml for the 500 ml package to 0.2216 g/ml for the 50 ml package). The company encourages consumers to purchase the larger size, e.g. as a refill for the smaller bottles.

<sup>3</sup> Precise weight data were not available for the old 500 ml bottle.

<sup>4</sup> The bottles are made of 100% HDPE, and no other materials are joined to the bottle.

**Fee Impacts:** In most countries, the difference in fees for the new bottles will simply reflect the change in weight (i.e. a reduction of approximately 2.5% in the smaller sizes; an increase of 10% in the 1000 ml size). For example, the 250 ml size bottle and cap would reduce the fee from 0.67¢ to 0.63¢ in France and from 5.3¢ to 5¢ in Germany<sup>5</sup>. This is due to the fact that most fee systems do not include a discount for recycled plastics.

If sold in Denmark, however, the redesign would reduce the fees for the 250 ml size bottle and cap from 6.5¢ to 3.7¢ per unit, a savings of more than 40%<sup>6</sup>. Furthermore, in Denmark, the discount for recycled content would more than offset the weight-driven increase for the 1000 ml size, resulting in a 35% fee savings for that size.

For more information on international packaging fees, [click here](#).

Aveda also saved approximately \$1 million annually through its packaging redesign and the associated changes in sourcing. The company reports that by working closely with its suppliers, it is generally able to purchase packaging using post-consumer recycled content at a cost equivalent to or lower than the cost of comparable packaging made of virgin materials.

**Credits:** *Catherine Goodall, Environmental Packaging International. Special thanks to John Delfausse, VP of Packaging Development, Aveda (<http://www.aveda.com>).*

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<sup>5</sup> Based on February 2005 exchange rates: 1 EUR = USD 1.324.

<sup>6</sup> Based on February 2005 exchange rates: 1 DKK = USD 0.178. The Danish fee structure provides a discount for plastics containing 50% or more recycled content (pre-consumer recycled content is also eligible for the discount).