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The Recycling Journey of the Plastic Beverage Bottle



Toronto, ON – October 24, 2013 - You probably know that recycling a plastic beverage bottle recaptures its value and keeps it out of the local landfill. You may also know that the bottle can live a second life in a container, carpeting, playground equipment, automobile parts, sleeping bags, shoes, luggage, other plastic containers and even clothing.

But have you ever wondered exactly how the plastic bottle that you toss in the recycling bin becomes a new T-shirt or rug?

The transformation from beverage bottle to new product begins at a recycling facility that receives large bales of used plastic bottles. The bottles are compressed into bales to reduce transportation costs and energy. These bottles already have been pre-sorted, so each bale should contain only one type of plastic: polyethylene terephthalate (PET), the type of plastic most commonly used to make pop, water, juice, sport drinks and other beverage bottles.

At the recycling facility, the bales are torn apart by a machine called a bale breaker. The separated bottles then are run under a magnet that attracts any metal pieces that may have mistakenly come along for the ride. After that, the bottles are run through a washing machine that works just like the home version – only it's many times larger, of course. The soapy water removes the labels from the bottles as well as dirt and debris.

The next step: separating the bottles from the bottle caps that typically are made of polypropylene and can be recycled separately. But if you're imagining hundreds of workers endlessly unscrewing caps from bottles, don't worry—there's a much more efficient method. First, the bottles and caps are ground into small flakes that are placed in a large tank of water.

Since PET and polypropylene have different densities, the bottle flakes sink in water while the cap flakes float. This makes it possible to separate the two plastics for recycling.

After the PET flakes head through another wash cycle to remove any leftover dirt, they pass through an extruder. This machine heats up the flakes until they combine and become gooey... and then pushes the plastic through screens to create long, tubular strands of plastic, kind of like that soft clay “spaghetti” press you used as a kid. The strands are cooled and hardened in water, chopped into pellets... and then shipped to companies that make a variety of plastic products, including new bottles.

If the recycled PET is going to be made into fabric, the pellets will be melted down and pushed through an extruder once again – but this time the strands will be stretched into a very fine, soft thread (fibre). This thread then can be woven into versatile fabrics that you’d never guess were made from recycled plastic bottles.

The demand for recycled plastics continues to grow, which makes collecting these bottles more and more important. And people have responded – 95 per cent of Canadians can recycle their plastic bottles and recycle 150 million kilograms of plastic each year from bottles alone! You can do your part: replace bottle caps after use, recycle at home, hang on to empty bottles until there’s a recycling bin handy, and encourage your friends to do the same.

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