

Recycling Revealed – The Recycling Journey

We think the Preserve recycling process, from yogurt cup to toothbrush, is a pretty perfect combination of elements that make us unique as a company: grassroots environmental ingenuity and savvy entrepreneurial instincts.

While we recycle a wide range of #5 plastics, let's focus on the path a yogurt cup takes to become a toothbrush. Here's how it works:

1. We source yogurt cups in two ways.
2. We collect used yogurt cups (post-consumer) from consumer mail-ins and via our Gimme 5 retail recycling program. We also collect unused yogurt cups (post-industrial; also called "pre-consumer") directly from Stonyfield.
3. At our Gimme 5 recycling facility, the cups are sorted along with the other #5 plastics we collect.
4. The cups are washed and ground into flakes, then heated up and extruded into little plastic beads.
5. We take those little beads to our manufacturing facility and injection-mold them into handles. Then we just add bristles and presto: new Preserve toothbrushes!

We know that not everyone finds recycling as fascinating as we do, so feel free to stop here. (But if the nitty-gritty details of recycling systems appeal to your inner enviro-nerd, please read on!)

The #5 Plastic Ecosystem: The Journey of a Recycled Yogurt Cup

Let's zoom out and look at the broader recycling system, still following the journey of a yogurt cup if it were to go into the municipal recycling stream.

Collection

When we think about recycling, we generally think about the products we buy (and their packaging). But some #5 polypropylene plastic products and packages (including yogurt cups) never make it into the consumer's hands. These "post-industrial" or "pre-consumer" products may be defective, printed improperly, or simply overstock that was never used. Preserve and our recycling companies collect these cups and other materials directly from the manufacturers, where they're taken directly to the reprocessing or extrusion step (see below). Many manufacturers reuse these materials on site, but this is not always possible because of regulations or available resources.

Most yogurt cups, though, are filled with yogurt, transported to stores and taken home, where their contents are happily eaten by hungry adults and children. The majority of these "post-consumer" cups can be collected in municipal curbside recycling programs. In fact, in 2013 the ACC (American Chemistry Council) calculated that 61% of US consumers had access to programs to recycle #5 plastic. (By comparison, #1 and #2 plastics had even more impressive numbers—topping 90%.)

Sorting

But collection is just the beginning. The majority of curbside collection programs are single-stream programs where all plastics (and other recyclables) are commingled. These single streams are typically brought to large Materials Recovery Facilities (MRFs; pronounced "Murfs"), which specialize in culling the valuable recyclables from the stream. Plastics are separated by type using infrared systems that

detect the unique chemical structure of each plastic. Little puffs of air are then used to push similar materials into the appropriate container.

Unfortunately, many MRFs currently separate only #1 and #2 plastics, as these are the only ones that yield enough profit to pay for the separation. That leaves the rest of the plastics (numbers 3 through 7) going into mixed buckets for export to unknown ends—often including landfills and incineration. But the life cycle of #5 plastics is changing. Thanks to programs like ours and others, more MRFs are finding that they have markets for their #5 plastics. They are taking steps to separate the #5s and selling those to a plastic reprocessor.

Reprocessing and Extrusion

#5 plastics recyclers (called “reprocessors”) receive bales of #5 plastics from MRFs. They wash the plastic and grind it up into dime-sized flakes. Strong surfactants (i.e., soaps) are used to remove inks, adhesives and other possible contaminants that adhere to the plastics. These flakes are also put into a water tank to further purify the plastic based on density, since some plastics float and others don’t. From there, some reprocessors also separate the flakes by color.

The last step in the process is to extrude the plastic flakes. Extrusion machines heat them to very high temperatures and pressures while mixing in processing and decorative aids. The flakes are then extruded into little plastic beads ready to be molded into new products.

Side Note: Are all #5 plastics recycled this way?

No. Bottle caps are an interesting exception. Many municipalities accept #1 (PET) plastic bottles with their caps attached. These bottles are separated at MRFs and then sold to plastics reprocessors that specialize in #1 plastics, where the bottles and caps are washed and ground up, as described above. When the ground materials are placed in the water tank, the flakes from the caps float to the top and the flakes from the bottles sink to the bottom, resulting in two different streams of plastic. In fact, if these caps are left off the bottles they are most often not recycled at all as they are too small for the recycling processes at MRFs. Some plastic caps don't have a corresponding bottle, such as those on pouches or juice cartons. For these cases, and in cases where select municipalities have said that they don't want caps left on bottles, Preserve accepts plastic caps for recycling through the Gimme 5 program.