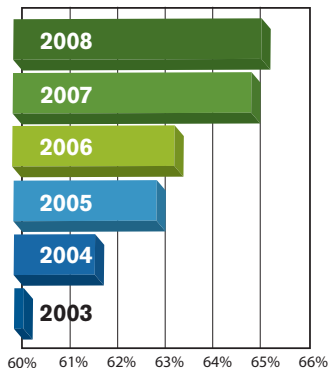


Unbiased global packaging intelligence and analysis

Steel-ing Home

U.S. container steel recycling rates, %



Source: Steel Recycling Institute

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The future in a pouch

THE TAIL THAT WAGS THE DOG: PLA FINDS A LEADING ADVOCATE

The parade toward alternative packaging materials has been led until now by polylactic acid (PLA), a material that brings demonstrable benefits...and demonstrative recycling problems.

As chronicled at past **Packaging Strategies** events and elsewhere, the corn-based material -- coming mainly from **NatureWorks** and its *Ingeo* resin -- can foul the recycling stream when mixed or confused with PET.

But there may be some help on the horizon, if PLA is to fulfill its promise. Mike Centers, a leading consultant for municipal recycling facilities (MRFs) who has installed MRFs, is launching a new company, **BIOCOR**, that plans to buy used PLA from recyclers and create a new market providing value for the material.

Centers told *Packaging Strategies* that Concord, CA-based **BIOCOR** would act as a middleman by both procuring material and collaborating on PLA recycling pilot projects with both private and public entities.

Huhtamaki's Bioware cups, using PLA, were recently used at the United Nations' Conference on Climate Change.



He believes that the only way to move PLA forward as a recyclable material is for someone to create a market that incentivizes recyclers to work with the resin. "Someone needs to be the tail wagging the dog," he said. "There's going to be a tipping point where converters are ready to use it."

BIOCOR also has started work **Galactic**, a Belgium-based maker of lactic acid, which is preparing its new *LOOPLA* recycling system. The company is developing a closed loop process where the lactic acid is recovered from PLA wastes and then repolymerized into PLA material. The work includes partnerships with **Total Petrochemicals** (through Galactic's **Futero** venture), **NatureWorks**, and **Huhtamaki**.

Packaging Strategies' Perspective: PLA continues to find new uses, such as **Frito-Lay's** bold move to make a *SunChips* bags entirely from the material. But for its long-term success as a sustainable solution, recycling has to be part of that equation. **PS**

IBM, STANFORD SCIENTISTS BREAK DOWN THE PERFORMANCE OF DISCARDED PET

Scientists from **IBM** and **Stanford University** are studying a means to not only break down PET and plant-based plastics organically for reuse but to potentially use PET feedstocks to produce other composite materials.

The multiyear collaborative effort (ongoing for close to eight years) has come up with a virgin PET resin from discarded PET bottles by depolymerizing the material to a monomer through organic catalysts.

That could solve a thorny issue in the recovery of PET materials -- the fact that the resin can generally be reused only once in a similar application without a corresponding performance breakdown, said Robert Allen, senior manager of chemistry/materials with IBM Research-Almaden. The group also is looking at the reuse of plant-based biopolymer materials that offer the same performance characteristics.

The California-based research group worked with Stanford scientists to develop new resins using organocatalysts, in this case nitrogen-based compounds that substitute for metal oxide or metal hydroxide catalysts. The organic substances provide faster processing at lower temperatures, Allen said.

The group is working with scientists from **King Abdulaziz City for Science and Technology** (KACST) in Saudi Arabia



Breaking down PET bottles to a monomer state and generating virgin resin is a goal of IBM and Stanford scientists.

to develop a recycling process for the material. In an ideal recycling environment, the discarded PET packaging would be bathed or suspended in ethylene glycol. The super-catalyst would release BHET, a PET feedstock, which would be collected in another reactor to produce virgin PET.

On a larger level, the group also is looking at using the BHET to make other composites from the discarded PET. "You could literally feed in chopped up flakes of PET from bottles you rescue from the landfill," Allen said.

IBM officials estimated that as much as 13bn plastic bottles are disposed of each year in North America. The IBM-Stanford

group would reverse the polymerization process, essentially regenerating monomers in their original state.

"A better catalyst means faster processing, lower temperatures and mild conditions," Allen stated. "If you're dealing with PET, it is not a small application."

Packaging Strategies' Perspective: *The use of organic catalysts is gaining steam, avoiding the need to mix metal catalysts with plastic and mar recycling.*

DuPont and others also are working with organic catalysts, but finding high-performance applications in high volumes is the challenge. **PS**

THE SECURED CONTAINER: PWP OFFERS TAMPER RESISTANCE IN RECYCLED CLAMSHELLS

PWP Industries is hitting on two of the major consumer issues facing foodservice thermoformers, food safety and recycling, with a new tamper-proof container.

The Vernon, CA-based company is releasing the leakproof container to meet the growing fear of contamination in clamshell packaging, offering a one-piece design that includes indicator buttons separating the lid from the container.

PWP Industries is offering a tamper-resistant foodservice container that uses PCR material

Citing a recent **Hartman Group** study that said safety was

one of the basic factors driving consumer behaviors about buying and eating food, PWP spokesperson Natalie Kirschner said the clamshells -- for produce, bakery, and other grocery needs -- are a response by the company to

requests for greater security.

The packages also use 25% post-consumer recycled content, processed from PWP's recycling facility in Davisville, WV. In a closed-loop process, the company receives post-consumer flake from **Coca-Cola Recycling**, coming from discarded PET bottles, and washes and cleans the shredded bottle material, Kirschner said. The flake is crystallized into an FDA-compliant material that is sent to PWP's Mineral Wells, WV, plant for processing.

The new clamshells are among the first in the United States to take recycled material directly from a closed-loop system from a thermoformer using its own material.

Packaging Strategies' Perspective: *While some of the media stories on food contamination have died down, look for this issue to continue to rear its head. It is causing some food processors to think twice about buying food packaging from overseas and to look at more secure containers.* **PS**