



The Association of Postconsumer Plastic Recyclers

The voice of plastics recycling

Degradable Plastics

A recycling coordinator's guide to managing new types of plastics

Chances are your program is seeing an influx in bio-based plastics and plastics with degradable additives. Like most recycling coordinators, you probably have questions.

Are all degradable plastics the same?

There are two sets of materials involved in the degradable question. One set of degradable plastics are materials such as PLA (Polylactic Acid) that are unique plastics. The second set is materials of the standard #1 PET and #2 HDPE with special degradable additives included.

Are degradable plastics recyclable with standard PET or HDPE?

No. They're contaminants in the recycling stream. Degradable plastics should be collected so as to not interfere with current PET and HDPE container recycling.

Will degradable bottles break down in a landfill?

Probably not. Some need a high-heat commercial composting operation to break down into polymer level material. Some degradable additives are specifically stated to not work in landfills. Others are claimed to work only after years in the landfill.

But some companies producing degradable additive plastics claim that they are recyclable in today's collection methods.

According to Steve Alexander, Executive Director of the Association of Postconsumer Plastic Recyclers, "These claims of recyclability are unfounded, untested and possibly misleading as outlined by the Federal Trade Commission's Green Guide. No third party testing data has confirmed these statements of recyclability. We urge companies claiming recyclability to share such supporting data with the recycling community."


Why can't bottles with degradable additive be recycled with standard plastic?

The additives change the expectations for a plastic. Bottles with degradable additives can be ground and melted like another bottle but with reduced quality and service life expectations.

"The facts are very clear," reports David Cornell, the Technical Director from the Association of Postconsumer Plastic Recyclers (APR). "The degradable additive concept effectively renders the product using the additive non-recyclable. Many recycled plastics are used to make durable goods. Failure of these next-use products, such as carpets or piping, could range from distressing to tragic."

APR has seen no data which demonstrate no harm done during or after the recycling process. With the variety of durable end uses recycled plastics are used for, the idea of degrading material runs counter to value creation and good stewardship.





CONSIDER THE SOURCE

WHO ARE WE?

We're the plastics recycling guys.

WANT THE LONG STORY?

The Association of Postconsumer Plastic Recyclers represents companies who acquire, reprocess and sell the byproduct of more than 90% of the post-consumer plastic processing capacity in the United States, Canada and Mexico.

WANT THE WHOLE STORY?

Visit our website:
www.plasticsrecycling.org

What do you mean by reduced quality?

Consider this scenario: A bottle with degradable additives makes it through the recycling collection stream and ends up in a bale of crushed PET bottles. The bale sits outside for a few weeks and then goes through the normal grinding, washing and pelletizing process of recycling. That batch of PET plastic is then made into strapping that then holds a pallet of bricks on the back of a truck heading down the highway. That's a lot of time, weather and heat that could potentially trigger the degradable qualities of the plastic and cause that strapping to fail.

Are bio-based plastics, PLA, and degradable plastics all the same thing?

No. PLA and other bio-based plastics are made from plant materials, often corn. Not all bio-based plastics are degradable. Some petroleum-based plastics can biodegrade. Degradable additives are claimed to work in many resins. A degraded material is an opportunity lost to reuse a valuable resource.

But isn't it a good idea to look for a non-petroleum plastic product?

On September 11, 2009 Resource Recycling Magazine reported: *New research from Germany is adding fuel to the conventional versus biodegradable plastic resin battle. The Institute for Energy and Environmental Research (IFEU) has released the results of a new study, comparing the environmental impact of traditional polyethylene bags and their biodegradable counterparts available in France and Germany.*

After taking into account the raw material production process, transportation factors and recyclability, the study concluded that PE bags are less damaging to the environment than biodegradable bags. Furthermore, IFEU researchers concluded that bags made from recycled material have the smallest environmental impact.

This is all confusing. What is APR doing to help make the issue easier for recycling coordinators?

APR has devoted considerable time and energy to produce guidelines to determine if a material meets or exceeds standards for recyclability. APR is working with producers of plastics to ensure recyclability because we are dedicated to keeping the stream of recyclables clean and valuable. This applies to all materials.

What should I do?

Ask producers of bio-based and oxy-degradable plastics to prove that their material does what is claimed and is safe to recycle. Ask for proof that carpets from recycled PET and highway culvert pipes from recycled HDPE will have their full expected service life if the degradable additives are included with the plastic. If you are part of a university or industry setting where you can control purchases, work with recyclers to be sure that a material is recyclable before its introduced for sale in your facility.