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What are biodegradable additives for petroleum-based plastics?

Stretch films that are sold with Bio-assimilation Technology are designed to biodegrade, or bio-assimilate, after twenty four months. The idea is that the stretch film degrades to a molecular weight that can be consumed by microorganisms. This represents the final stage of plastic biodegradation, leaving behind no microplastics.

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Do these additives work? Are they good for the environment?

We don't have any way to verify or refute the effectiveness of the additives, but we believe strongly that using these in a highly recyclable material like stretch film will have a negative effect on the environmental impact of these products.

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How do biodegradable additives affect stretch film recycling?

Stretch film is one of the most highly valued flexible film products available in the recycling market today. Millions of pounds of film are recycled every year. That recycled material is used in plastic lumber, decking, and other products. These bio-assimilation additives have the potential to degrade the entire recycling material stream.

04

What do experts say about biodegradability additives?

The Sustainable Packaging Coalition, the leading voice on sustainable packaging, shares this position. Here is an excerpt from their publication on the subject:

It is important that we maximize the opportunity for the most beneficial end-of-life scenarios for petroleum-based plastics because petroleum extraction and manufacturing processes carry significant environmental investments. Petroleum based plastics have two inherent attributes that make them ideal for recovery: their high embodied energy content qualifies their value for controlled energy recovery, and their exceptional durability renders them ideal for recycling.

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Biodegradability additives, by design, are intended to compromise that exceptional durability. Although additive manufacturers claim no unwanted effects on the material's recyclability, satisfactory evidence does not exist. The SPC supports the position statements of the Association of Postconsumer Plastics Recyclers (APR) and the National Association for PET 2 Container Resources (NAPCOR), and advises manufacturers of biodegradability additives to submit to APR's testing standards before claiming any absence of adverse effects on recyclability. The SPC questions the concept of using additives that are fundamentally designed to compromise the structural integrity of a recyclable material, although a peer reviewed test proving the benign nature of biodegradability additives on the recycling processes would be welcomed.

05

What about post consumer resin (PCR)? Is this good for the environment?

The entire plastics segment is trying to move toward the use of PCR resin. This is a very positive step. Using PCR solves two major sustainability problems.

1. Because the resin has already been extracted from petroleum, the carbon footprint of PCR is much lower than virgin resin.
2. Collecting plastics that would normally go into the waste stream to make PCR is also a major benefit.

06

Does PCR have a positive environmental impact when used in stretch film?

These two sustainability benefits mentioned above are only beneficial if the PCR resin is used to reduce the amount of virgin resin. Using PCR resin without a reduction in virgin resin consumption is not sustainable.

We're seeing stretch films promoting PCR resin offered in 70 and 80 gauge. With 25% PCR content, that means that the virgin thickness of those materials are 52 and 60 gauge.

At Atlantic, we sell many handfilms that are 25 to 30 gauge and lower. **The heavy gauge PCR hand films have 2-3X the environmental footprint of these lightweight films.**

07

So, should we stay away from stretch film made with PCR?

Quality stretch film containing PCR with real sustainability benefits is coming and Atlantic will be on the forefront of that initiative. We will promote these products only when we can demonstrate that they provide measurable sustainability benefits.

For now and always, **the number one rule of sustainability is to use less.** We do that through:

1. High performance materials
2. Optimized equipment
3. Optimized wrap patterns

This is the most sustainable way to stretch wrap.

For more information, visit our MUST Stretch Management System or explore the testing and verification processes we offer at the Packaging Solution Center.

