# How to Choose the Right Eco Friendly Packaging – Biodegradable vs. Compostable vs. Recyclable

For many years, plastic has been the standard in packaging. As concerns mount over environmental issues, however, there's increasing demand for sustainable alternatives.

In some cities, such as San Francisco, governments are passing legislation that bans the use of plastic bags, while many retailers are proactively taking steps to "go green." Popular food retailer Whole Foods, for instance, no longer uses plastic bags, and 60% of Apple's paper packaging is now made from recycled wood fibers.

According to a recent survey, over half of American consumers said they would choose green products over conventional options if given the choice.

Green packaging is no longer just a niche marketing tactic; with long-term benefits easily outweighing the added costs, they're imperative for remaining competitive in today's changing landscape.

Making the decision to go green is simple. Understanding the various packaging options, costs, and marketing claims is often a challenge for brand owners.

Sierra Coating has been researching and working with poly replacement alternatives for years. Our team can shorten the product development stage by having already screened and tested a number of market-ready alternatives.

When developing an eco friendly package, it's important to consider the specific usage standards that your application requires as well as material disposal methods.

## The Ideal Solution

When choosing between biodegradable, compostable, and recyclable packaging; it's important to ensure the chosen material does, in fact, reduce waste efficiently and effectively.

At current standards, there are three optimal solutions for creating an eco friendly package:

1. Make the package smaller to reduce your footprint
2. Utilize recycled materials to create the package
3. Create a recyclable package that can be disposed of in a sustainable manner

For many packaging applications, paper is an ideal solution. Folding cartons are ubiquitous; they are used to ship everything from electronics to pharmaceuticals and provide a sustainable, customer-friendly experience.

Folding cartons can be made out of recycled materials and coated with environmentally-sustainable barrier coatings. Not only is folding carton sturdy, lightweight, and customizable; it's also cost efficient.

## Eco-Friendly Packaging and Disposal

# Options

## Compostable Packaging’s Geographic Limitations

When disposed of properly, compostable products will break down through microbial digestion into humus, providing valuable nutrients to the soil without releasing toxins or metals.

Under the right conditions, this process takes approximately 180 days. However, this is rarely the case. According to ASTM standards, compostable products must be disposed of at a municipal or industrial facility that uses heat to properly break down the product.

Retailers rarely have control over consumers’ disposal methods. Compost facilities are usually located in major cities, limiting the impact and effectiveness of a brand’s sustainability effort.

More often than not, materials end up in trash cans and eventually in landfills, which are not conducive to the sustainability goal of the compostable package.

## Biodegradable Packaging’s Greenwashing Association

Biodegradable packaging materials are broken down by bacteria, fungi, or other microorganisms. This occurs through either anaerobic (without oxygen) or aerobic (with oxygen) degradation.

Unlike other sustainable products, biodegradable materials are not required to meet any specific industry standards or regulations.

And because virtually everything is biodegradable, whether it

happens in one year or 100, marketers often exaggerate claims of biodegradability. In fact, the ubiquity of the term has come to be associated with "greenwashing," misleading consumers about the true environmental impact.

To combat this, the Federal Trade Commission (FTC) has set forth the Green Guidelines as a benchmark for marketers.

These guidelines state that a biodegradable product "will completely break down and return to nature within a reasonably short period of time after customer disposal." However, the FTC has yet to pinpoint what is considered a reasonably short period.

## Recyclable Packaging: The Most Eco Friendly Option

Recyclable packaging, on the other hand, can be remanufactured into something new after its initial use. Similar to composting, the efficacy of recycling depends on a number of factors.

First, the end user must make the decision to recycle the product, and their recycling center must have the capabilities to recycle that specific material. (Recycling guidelines can vary greatly by region). Also, the product cannot contain any food contamination.

When these requirements are met, recyclable packaging is often the most eco friendly option, since it allows the material to be reused for the same purpose.

Although recycled material requires energy, it still increases the overall product lifecycle. Manufacturers can also take more responsibility themselves by using recycled material as an input of the base product, rather than relying solely on the consumer to recycle.

## Additional Resources for Packaging Engineers

At Sierra Coating Technologies, our team of experts can work with you through the development process and customize packaging solutions for your unique needs. Interested in learning more about green, paper-based packaging options?

Further your search and gain a clearer understanding of industry-specific applications with our Glossary of Top Misunderstood Terms in the Paper Industry, or contact our team directly to discuss your next project.

DOWNLOAD Glossary Guide

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# Finding a Cost-Effective Poly Replacement for Packaging

## The Move to Eco-Friendly Packaging

Over the past several years, businesses across multiple industries have taken a growing interest in environmental sustainability. The packaging industry plays a critical role in this movement, as packaging is often the first thing a customer notices about a product. As such, companies are tasked with reconciling environmentally-conscious material selections with cost-effective production.

Petroleum-based plastics, though affordable and easily sourced, are nearly impossible to recycle, The Guardian recently explained; they litter the Earth and pollute oceans

forever without biodegrading. Instead, packaging companies must seek out alternatives to create more sustainable solutions. Even candy manufacturers are now looking for eco-friendly wrappers, using wood-based materials and non-toxic ink to create a compostable solution.

## Replacing PVC and Plastics in Packaging

Recognizing this shift toward sustainability, Sierra is seeing a growing opportunity to replace polyvinyl chloride (PVC) and other harmful plastics with greener, biodegradable package made with paper. This is especially relevant to blister packaging; because it cannot be recycled due to mixed material limitations, the packaging tends to wind up in landfills.

PVC and low-density polyethylene (LDPE) resins, found in many of today's packages, are neither recyclable nor biodegradable due to their use in a package design. When exposed to high temperatures, these wrappers can also release toxic fumes and dangerous chemicals into the environment.

Plastics, which for many years held the advantage over paper for being heat sealable, have finally met their match. Sierra has developed innovative paper-based blister pack technology to reduce or replace PVC, LDPE, and other harmful plastics commonly used in packaging structures.

These paper-based recyclable coatings provide protective features that can compete with traditional packaging – but without the negative side effects. Both environmentally friendly and affordable, Sierra's blister packs can be heat sealed while still allowing products to biodegrade much more

easily. These state-of-the-art “green” coatings can be used to design packages that reduce PVC or replace poly coatings.

## Creating a Cost-Effective Poly Replacement

Many companies are seeking affordable poly-replacement materials that will allow their packages to biodegrade, allowing them to position their products as environmentally friendly. For decades, this was a high-priced specialty order, but now Sierra is working on closing the gap on cost-effective poly replacements with paper-based packaging like blister packs.

Until recently, green packaging solutions only existed on a small scale due to relatively higher costs compared to polys. As more brand owners respond to customer desires for an environmental solution, innovation has created alternative options that are reducing costs. Sierra continues to source and test these innovative coatings to drive this technology into the mainstream.

To learn more about the benefits of blister packages, as well as what to consider when designing them, download our eBook, “Critical Elements of Blister Packaging.”