

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](#)

How Chemical Companies Work with Toll Coaters

Introducing Sierra's Business Alliance Program

Though there are many keys to success in product development, two are most notable: speed to market and proof of production. To address the time and costs factors associated with developing a new product, business alliances are a great way to work efficiently and effectively.

For example, many chemical companies invest heavily in the development of new products, but need to show proof of a successful production process and

provide finished goods to show potential customers. By working with a coating company in the pre-market stage of product development, a chemical company can expedite a new coating to market.

Why Sierra Customers Toll Coat

According to Robert Porter Lynch's *Business Alliance Guide*, a "variation of product alliances is the joint manufacturing venture, where, because of scale costs, it makes economic sense to build a plant of large capacity, but no one company's market can support the entire production capacity" (page 59).

It is for this reason that contract and toll manufacturers exist – to absorb the fixed overhead costs associated with running a facility, providing clients with a way to create a purely variable cost method of developing new products. ❌

Business Alliance Advantages

There are a number of benefits to forming a business alliance. Primary among them are access to production equipment and technical experience in coating.

When working with a manufacturer who has partnered with clients across a variety of industries, you benefit from having a highly knowledgeable product development expert with wide-ranging industry contacts.

Alliances also facilitate knowledge sharing between companies and can allow for new product applications in niche markets.

Sierra Coating's Chemical Business Alliance Program

As part of our Sierra Chemical Business Alliance Program, we are currently looking to form dedicated alliances with chemical companies that have developed innovative product solutions of their own. Sierra often recommends water-based chemicals for our clients' products in order to meet their specific needs.

As a trusted toll and contract manufacturer with services, such as raw material planning, our team works with paper mills, printers, and brand owners to help develop new products.

To best guide our clients in choosing the proper chemicals to use, Sierra also works with chemical companies to develop a solution for our client's requirements. Through this process, we facilitate growth for both our customers and ourselves.

What Our Clients are Looking For

Sierra serves clients across a wide variety of industries, but certain requirements come up more often than others. Our expertise is particularly pronounced in industries – such as the food and beverage, health and beauty, and retail industries, to name a few – that have product needs requiring

unique and highly specialized chemical treatments.

We frequently receive inquiries about innovative food-safe packaging, eco-friendly packaging and other poly replacements, heat seal and blister pack coating, and high-end luxury packaging. These are fast moving spaces that require regular innovation and reinvention to not only stay ahead of trends but to keep products compliant with ever-changing industry standards and guidelines.

To learn more about the benefits of a business alliance with Sierra, including the unique toll and contract manufacturing benefits that we bring to the table, [click here](#).



The Advantages of Toll and Contract Manufacturing

Developing On-Demand Services in Manufacturing

Consumers have grown accustomed to getting what they want, when they want it –services like Uber, Seamless, and Netflix are examples of how this on-demand business model can be successful. What if the on-demand model could be expanded to the manufacturing space?

Contract and toll manufacturing are prime examples of how the industry is ripe for the instant gratification marketplace. These two supply chain management strategies use the “sharing economy” model of on-demand services to help customers save time and money during product development.

Toll versus Contract Manufacturing

In toll manufacturing, a company provides a third party with raw materials to complete the manufacturing process for them. The toll manufacturer, equipped with the necessary production equipment and specialists, charges the company a fee (a toll) to finish the job.

Contract manufacturing is a similar process, except the contract manufacturer is responsible for sourcing raw materials in addition to making the product, meeting customer specifications, and adhering to delivery time requirements.

The Cost-Saving Benefits

OEMs and other industrial manufacturers can apply the on-demand service model to their businesses by taking advantage of toll and contract manufacturing.

By going to a third-party when they need specific services, companies avoid

the investment required for additional equipment, facilities, and employees. In turn, they receive the services they need, when they need them, while saving time and money.

This on-demand service model is ideal for new product development, seasonal projects, and testing products by utilizing a variable-cost operation.

Contract and toll manufacturers allow companies more flexibility no matter what stage of production they are in. During product development, for example, companies can contract a manufacturer to begin production while still building their own facility.

They can also reach out to contract manufacturers for assistance producing high-quantity orders during overflow production or to help source and test materials during first-run production.

Sierra Coating operates as a toll and contract manufacturing organization (CMO) providing critical on-demand laminating services to our customers. To learn more about this model and the financial advantages of employing a contract or toll manufacturer, download a free copy of our eBook, “The Financial Case for Contract Manufacturing.”



Why Raw Material Planning in Manufacturing is Essential

You’ve heard the terms “toll manufacturing” and “contract manufacturing” before. In fact, you may have even read about them last year in our blog on toll manufacturing versus contract manufacturing.

Toll and contract manufacturing are both advanced tools for supply chain management. These types of manufacturing processes are usually utilized in new product development. They are very similar processes that can often be confused. There’s an important, yet often overlooked, difference between the two.

Toll versus Contract Manufacturing

When you work with a contract manufacturer, you are essentially partnering with an independent manufacturer – they will source all of the raw materials, manufacture the contracted part, and deliver a completed product to you. In toll manufacturing, the company will manufacture your part, but you or an additional third-party is responsible for sourcing and delivering the raw materials.

The difference between the two lies in who is responsible in the risks associated with raw material planning. These risks often include the price, quality, and delivery of the raw materials. Toll manufacturing is often done by a raw material manufacturer to create a new product line for the company.

The toll manufacturer is assuming the risks associated with raw material planning and product manufacturing. Whereas contract manufacturing is considered a turnkey solution for clients, where the contract manufacturer is responsible for raw material planning and product manufacturing dates.

Why Raw Material Planning Matters

Businesses, manufacturers in particular, are increasingly relying on Just-in-Time (JIT) and other similar manufacturing processes. The JIT process is an inventory strategy to reduce costs associated with product storage.

A key element of JIT and related processes is raw material management. The entire process relies on the requisite materials being delivered to where they are needed at the time when they are needed, creating a steady inflow of material and outflow of completed parts. Sierra Coating specializes in raw material planning, skills which we put to use when partnering with you as a toll or contract manufacturer.

We maintain an in-house team of experts dedicated to raw material planning a wide variety of chemicals that we use during coating processes. The team includes a logistics planner, a raw material planning specialist, and two dedicated chemists. Our team procures the chemicals that your product requires, testing them on production equipment to ensure the product functions properly.

Trusting Your Partners with JIT Manufacturing

Though extremely important, raw material planning is only one part of a multi-stage process – JIT and other production streamlining methodologies must be maintained throughout the entirety of a production process in order to be effective.

At Sierra Coating, we follow through. After testing and procuring high-quality raw materials, we can manufacture and ship your products on a JIT schedule. Our raw material team works hand in hand with our manufacturing team to ensure that every step of the process runs seamlessly.

To learn more about the benefits of working with a toll and/or contract manufacturer, download our free eBook, *The Financial Case for Contract Manufacturing*.



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."



Join Us at Lambeau for the 2016 Converters Expo

North America's biggest packaging show is right around the corner. The 2016 Converters Expo will be held in Green Bay, Wisconsin on April 13th and 14th at the legendary Lambeau Field. Our Sierra Coating team will be at booth #A213, ready to welcome our old colleagues and connect with new show attendees.



We are looking forward to showcasing our full array of packaging services at the upcoming event. From initial concept to full-scale production, we cover a complete range of coating and laminating services. These include our cutting edge eco-friendly and high barrier coated paper, which combines superior product protection and sustainable packaging, and our food grade packaging and made-to-order products, which fulfill our customers' most challenging specifications.

Education, Networking, and More

The Converters Expo is a one-of-a-kind opportunity for paper, plastic, film, and non-woven packagers and converters to meet industry buyers and suppliers. Last year's event set a new record for attendance, and this spring's expo is promising to be bigger than ever.

Over 75 exhibitors are already enrolled for the 2016 event, and attendee registration numbers continue to grow. Event attendees will have the opportunity to see the latest and most advanced products while learning from the industry's top professionals. All participants will gain access unparalleled educational opportunities, including discussions about the

newest trends, techniques, and advancements in the industry.

The following industries represent just a few of the exhibitors planning to present at the upcoming expo:

- Coating and lamination
- Folding and finishing
- Printing
- Automation
- Packaging, warehousing, shipping, and logistics

Sierra Coatings: Contract Manufacturing On Demand

In today's on-demand world, contract manufacturing is booming. With a full range of coating treatments and lamination adhesive services available from companies like Sierra Coatings, customers no longer need to purchase their own equipment or build additional facilities to finish their products. As highlighted in a recent LinkedIn article, companies can leave this work to a contract manufacturer, thereby lowering costs and upfront investment while reaping the benefits of increased efficiency and streamlined production processes.

At Sierra Coatings, our services are an important manufacturing step for many customers whose products require films, paper, or nonwoven materials. Customers save time and money by letting us help with product development – no new machines required. With our highly advanced equipment, we can produce in any volume our customer needs – from prototypes to large scale runs.

We Look Forward to Meeting You

Learn more about our full range of coating and lamination services while networking at the largest expo in the industry of its kind, but be sure to sign up quickly before the event is full. [Click here to register for the Converters Expo](#), or contact us today if you would like to find out more about our capabilities at Sierra Coating.



Paper Coating Needs Increase Annually

The need for paper coating is on the rise with online shopping as one driver in this increase. Each year during Thanksgiving weekend, shoppers are turning to their computers and cell phones more and more to find the perfect gift or the best deal. More online shopping means more packages to ship, and more paper to coat.

Paper coating demand is expected to rise to more than 3.2 million tons of

material by 2020 from 2.4 million tons of material in 2014, according to a new report from Smithers Pira, a leading expert in packaging, paper and print market trends worldwide.

This increase in demand is partially due to the need for more packaging per year, including packaging for items purchased online.

With more and more retail customers choosing to stay home to shop, packaging needs are on the rise. For example, Thanksgiving weekend in 2015 saw \$11 billion in online sales from Thanksgiving Day through Cyber Monday.

Adobe Systems' market research also noted Cyber Monday hit a record high at \$ billion in sales this past year. Evidently, shipping and packaging are on the rise, which correlates to paper coating increases, as well.

In general, more than 30 percent of paper-based packaging has some kind of coating as a barrier or as another function, and this statistic includes the 100 percent of liquid packaging requiring a coating. These paper coatings can be a compound or polymer to impart weight, gloss, or lower ink absorbency on the paper surface.

As one of the most advanced paper coating companies in the industry, we plan to continue providing the best service and products in coatings. Three coaters help us support industry needs—two that are equipped with flotation dryers and one that is equipped with hot melt gravure coating.

Our wide web coaters can work with paper rolls as large as 62 inches wide. These same coaters are specially designed for low or high coating weights. Methods include the following:

- Gravure
- Direct reverse gravure
- Offset gravure
- Roll coating
- Offset pattern
- One color offset print
- Pan with trailing blade and roll coating
- Slot die

Our Hot Melt Coater and Laminator can use an offset gravure coating method. Its thermoplastic melting point is at 300 degrees Fahrenheit, or 149 degrees Celsius. Overall, our equipment is capable of laminating multiple layers of similar or different substrates.

Specific food-grade paper and our FDA-approved coating surfaces can be produced to the most specific of formats and requests for various packaging coating purposes.

With the paper, packaging and coating industries only expanding, Sierra Coating Technologies is ready to help with projects of many sizes and difficulty. Having already worked successfully on dry food packaging coating many times, we know the best procedures and back them with quality work and industry standard adherence.

Whether it is for mass production of paper coating for packages containing liquid products or for other packaging needs, Contact our team today to learn more about how we can help you with your coating needs.