Recycled Packaging & How it Impacts the Food Industry

Walmart Scorecard's Impact on Packaging

During a PACK Expo keynote in 2006, Walmart launched the packaging scorecard initiative. Since then, brands have been continuing to update and revise their packaging to create a more environmentally-friendly solution. Below is an outline of how the sustainable initiative has impacted the food industry across various package types, including paper-based, plastic, glass, and aluminum.

RELATED: Taking the Eco-Friendly Packaging Leap

Paper-Based Packaging and Poly-Replacements

Paper and paper-based products, such as cartons and paperboard, are easy to recycle, and the resultant recycled material is extremely versatile. More than half of Americans have easy access to paper recycling – an amount which is expected to increase rapidly – and there are far fewer restrictions on recycling paper than plastic.

For applications such as food safe packaging and high-end brand displays, coatings are utilized to provide the appropriate properties. To achieve a recyclable, paper-based package for these types of applications, water-based coatings are often required.

To address this, Sierra is working with nationally-recognized chemical companies to qualify reliable eco-friendly coatings. Our water-based, eco-friendly coatings can meet biodegradable, compostable, and fully recyclable requirements. These coatings also possess important properties to aid in brand awareness efforts; they are easy to print over and allow for optimal packaging aesthetics.

Plastic Brand Packaging

One of the biggest challenges with recyclable, plastic packaging is the restrictions involved with recycling plastic material. It is estimated that 95% of recyclable plastic packaging, amounting between $80 and $120 billion worth of packaging material, is wasted on an annual basis.

While outreach, recovery, reclamation, and recycling efforts can be effective for multinational corporations, they may be cost-prohibitive for smaller or regional brands. For these businesses, investing in eco-friendly packaging is often a more practical, actionable solution.

Recycling plastic presents a three-fold problem:

1. Public access to plastic recycling facilities or programs is surprisingly limited;
2. Different municipalities levy often confusing recyclability restrictions based on plastic type, size, and shape; and
3. The recycling process is costly in terms of money and energy use.

Aluminum, Glass and Plastic Bottles

As demand rises for sustainable products, brands are prioritizing green initiatives, such as eco-friendly packaging and packaging recovery.

The Coca-Cola Company, for example, has established an extremely ambitious recycling initiative – by 2020, they aim to recover and recycle a full 75% of the beverage containers, bottles, and cans they produce annually. Working with The Recycling Partnership, Coca-Cola has already recycled 59% of their output.

This is just one example of the growing sentiment in favor of environmentally conscious initiatives; worldwide, consumers are looking to brands to lead conservation efforts with sustainable, environmentally friendly packaging options.

To learn how to make your food packaging eco-friendly without sacrificing your unique brand identity, contact our chemical experts.

Biodegradable Packaging Options

Investing in environmentally-friendly packaging is quickly gaining momentum in many industries, including food and beverage. From a product development perspective, our paper experts have seen biodegradable packaging become increasingly popular.

> *According to the Environmental Protection Agency (EPA), a material can be described as biodegradable when it is "capable of being decomposed by the action of biological processes."*

In other words, a material is biodegradable if it will decompose within a reasonable amount of time when left outside in natural conditions.

RELATED: How to Choose Between Biodegradable, Compostable, and Recyclable Packaging

Packaging Materials and their Biodegradation Process

Glass, commonly used for packaging beverages and various high-end products, is not biodegradable. In fact, it can take up to 1,000,000 years to biodegrade. Plastics are not biodegradable, either; polyvinyl chloride (PVC), often used in food and beverage applications, is capable of physical breakdown but never truly decomposes. Polyethylene (also known as polythene or simply "poly"), another popular food packaging plastic, takes up to 1,000 years to biodegrade. Other plastics can take various lengths of time to biodegrade, averaging at about 450 years.

These packaging decomposition rates are untenable when striving for increased sustainability. Paper, on the other hand, is an ideal biodegradable option, taking anywhere from two to five months to decompose.

Biodegradable vs. Compostable

Because the terms are often incorrectly interchanged, biodegradability and compostability are frequently conflated. Adding to the confusion is the fact that the processes involve the same action – decomposing a material into an organic state. This decomposition occurs in two very different ways, however.

Compostable materials decompose only when in a carefully controlled environment, where factors such as source material, moisture content, temperature, oxygen levels, and acidity are all closely monitored. Biodegradable materials decompose through a chemical process where micro-organisms break down the materials resulting in carbon dioxide, methane, and biomass.

Paper Biodegradability

Paper is much more biodegradable than plastic or glass. Some paper can decompose faster than fully organic products. For example, paper towels often biodegrade quicker than thick fruit rinds such as orange or banana peels. However, it's important to keep in mind that not all paper products biodegrade at the same rate.

Less processed papers, such as mechanically pulped products, biodegrade at slower rates than more highly processed papers. Paper containing mechanical pulp has higher amounts of lignin – very complex phenolic polymers found in the cell walls of trees – which interferes with biodegradation.

Designing Eco-Friendly Packaging

The right coating can provide resistance to grease, oil, water, oxygen-exposure, or a combination of these food-safe properties for paper-based packaging; while maintaining the eco-friendly standard. However, these types of properties are often provided by poly- or PVC-based substrates, thereby negating any of the potential environmental benefits of using paper in packaging.

To counter this issue and create truly environmentally friendly packaging, Sierra Coating Technologies has partnered with some of the nation's most accomplished chemical companies to develop several biodegradable coatings.

As a leading contract and toll manufacturer of eco-friendly coating and lamination solutions, including poly and PVC replacements, Sierra is proud to be a part of the push toward sustainability. The benefit of working with Sierra is that we run tests on our production equipment to ensure the materials and substrates will run efficiently during a full-line production. If you're ready to make the switch to environmentally friendly packaging, contact our chemical experts.

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 $3.07 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.