





## Pliant Questions and Answers regarding Recycling – (as of April, 2008)



**Q: Many of our customers want to start recycling programs with Pliant. How do they get started?**

**A:** To get started, they need to understand the differences in the types of materials we provide them. Fortunately there has been a resin coding system in place for many years as well as a recycling industry infrastructure. Not all films are good candidates for recycling due largely to issues of contamination that mitigate the value of the resin. The following are the codes that apply to the films that Pliant produces:

	<p>Types of films Pliant produces in this material:</p> <ul style="list-style-type: none"> <li>• Food contact Packaging (i.e., Fresh Meat, Produce)</li> <li>• Food/Cling Wrap</li> </ul> <p>Potential for recycling and typical applications:</p> <ul style="list-style-type: none"> <li>• Typically not good as these films are typically contaminated due to their food contact.</li> </ul>
	<p>Types of films Pliant produces in this material:</p> <ul style="list-style-type: none"> <li>• LDPE (Low Density Polyethylene) <ul style="list-style-type: none"> <li>◦ Bag film such as thicker newspaper bags, shopping bags, and bread bags</li> </ul> </li> <li>• LLDPE (Linear Low Density Polyethylene) <ul style="list-style-type: none"> <li>◦ Stretch Wrap, thin newspaper bags, dry cleaning film, Agricultural films (silage bags, greenhouse films, bale wrap, etc.)</li> </ul> </li> <li>• MDPE (Medium Density Polyethylene) <ul style="list-style-type: none"> <li>◦ Consumer Paper Packaging (TTO)</li> </ul> </li> </ul> <p>Potential for recycling:</p> <ul style="list-style-type: none"> <li>• Dependent on cleanliness of the source, the potential for recycling of these resins is quite good. <b><u>These are the types of film Pliant sees great potential in developing new applications for.</u></b></li> </ul>
	<p>Types of films Pliant produces in this material:</p> <ul style="list-style-type: none"> <li>• PP (Polypropylene) <ul style="list-style-type: none"> <li>◦ Diaper backer sheet, cast film for laminations</li> </ul> </li> </ul> <p>Potential for recycling:</p> <ul style="list-style-type: none"> <li>• Most of the PP we produce ends up as part of a laminated structure so the potential to recycle is limited.</li> </ul>
	<p>Types of films Pliant produces in this material:</p> <ul style="list-style-type: none"> <li>• Coextruded films of mixed polymers (HDPE/LDPE, LDPE/Nylon, LDPE/EVOH, etc.)</li> <li>• Films with ink on them.</li> <li>• Film structures that have been laminated to different types of film</li> </ul> <p>Potential for recycling:</p> <ul style="list-style-type: none"> <li>• Pliant has developed expertise in working with all of the structures above and can assist customers in targeted applications.</li> <li>• For Post-consumer films, the same rules apply in that products that have come into contact with food are typically not suitable for recycling due to inherent health risks.</li> </ul>

**Q: My customer wants to identify the recycled product he buys from Pliant for his market. What do we recommend?**

**A:** This can be done in two basic steps. First, incorporate one of the plastic codes that are appropriate for the material being purchased. Second, add a short description about the content level of the recycled material. Examples:

<p><b>Customer is purchasing a LDPE bag film with 25% Post Consumer content.</b></p>	 <p><b>LDPE</b> Made with 25% Post-Consumer Recycled Content</p>	<p><b>To make this claim, the content of this film must be made with resin that Pliant has purchased from the market that has been collected after its initial use has been completed.</b></p>
<p><b>Customer is purchasing a LDPE bag film with 15% Pre-Consumer</b></p>	 <p><b>LDPE</b> Made with 25% Pre-Consumer Recycled Content</p>	<p><b>This distinguishes the fact that part of this film was made from internally generated (never sold to an external customer) trim or scrap.</b></p>

In the near future, the FTC (Federal Trade Commission) will be issuing additional guidance on appropriate labelling that may require the industry to standardize terminology and certifications. The current FTC language as it relates to “Recycled Content” claims:

*"Recycled content" claims on labels and in advertising may be made for materials that have been recovered or diverted from the solid waste stream, either during the manufacturing process (pre-consumer) or after consumer use (post-consumer). If the product or package does not consist of 100 percent recycled content (excluding minor, incidental components), qualifying words - like the percentage of recycled content in the product - must be used to limit the claim.*

*Pre-consumer recycled material is a waste product of a manufacturing process, diverted from the solid waste stream and not normally reused by industry during the original manufacturing process. To make an appropriate "pre-consumer" recycled content claim, you must be able to substantiate that the pre-consumer material would otherwise have gone into the solid waste stream. In contrast, by-products of a manufacturing process that normally are reused within the process and usually don't enter the waste stream are considered industrial scrap and don't count toward recycled content. When you make a "recycled content" claim, you may distinguish between pre-consumer and post-consumer materials if you have substantiation."*


(Additional information may be found at <<<http://www.ftc.gov/bcp/online/pubs/buspubs/greenguides>>>

If any customers are unsure of what to say on their packages or finished products, Pliant will help clarify what is appropriate.

**Q: What can Pliant offer to the marketplace with respect to “sustainable” products?**


A: Pliant offers a full spectrum of films that meet our customers’ requirements – films with recycled content and films that are degradable. One of the reasons why Pliant has one of the lowest net waste rates in the industry is because we are experts at recycling our own waste and we have developed many films that incorporate recycled plastics.

As the market need for “sustainable” products continues to grow in light of social pressure and consumer demand, Pliant is continuing to offer new products. We have recently launched our first series of Post Consumer Recycled (PCR) films for the **Contained™** line of premium bag film. In addition, we have recently launched films utilizing special additives (aka, oxo-degradable) that accelerate the degradation of the product after it has been disposed of in landfills. These films meet many requirements but care must be taken when considering for food contact certification.

In the area of source reduction, Pliant is again a leader thanks to our focus on downgauging and leading edge shrink films. We have the best products in the industry for source reduction. In fact, our stretch film business has been built on source reduction starting with  in 2001, and recently with



launched in 2007. We continue to amaze customers with the financial savings and packaging reduction with our technology.

In 2007, we also launched our  shrink film family as customers began to aggressively convert away from corrugated packaging to shrink film solutions. This reduces their disposal costs and overall costs on a typical basis of 20 to 60%. This market has been growing at 5 to 10% a year for the last several years and is expected to continue. Pliant has the best films in the industry.

We know how to add recycling content and degradable additives for all our films. We can do this as part of a mono-layer film or as part of a multi-layer film. We have a full spectrum of options at varying levels of cost and “greenness.” We can handle almost any request. Bring it on!

**Q: What is the Wal-Mart Scorecard?**

A: Wal-Mart developed the scorecard to measure its suppliers on how well they are helping Walmart achieve its own internal “green” objectives. Most large retailers are routinely blasted for how much waste they generate and dump into landfills. They are attempting to be responsive and drive “green” solutions. The essential elements of the scorecard are as follows:

1. 15% will be based on GHG / CO<sub>2</sub> per ton of Production
2. 15% will be based on Material Value
3. 15% will be based on Product / Package Ratio
4. 15% will be based on Cube Utilization
5. 10% will be based on Transportation
6. 10% will be based on Recycled Content
7. 10% will be based on Recovery Value
8. 5% will be based on Renewable Energy
9. 5% will be based on Innovation

These criteria were designed for Wal-Mart's suppliers to determine how their packaging innovations, environmental standards, energy efficiencies and use of materials match up against those of their peers. Wal-Mart suppliers will receive an overall score relative to other suppliers, as well as relative scores in each category. For example, a supplier may find it is in the 50th percentile in the Cube Utilization category for effectively using space in pallets and shipping containers, but that same supplier may only be in the 20th percentile in Recycled Content. This model gives suppliers the opportunity to focus on specific changes within the context of a fluid environment, driving constant change and improvement in the supply chain.

**Q: Can Pliant provide biodegradable or compostable material?**

A: Pliant has maintained a strategy of staying aware of new materials including those of a “biodegradable” nature. In general, we have found the current offerings of biobased resins (typically PLA which is sourced from corn) tend to have very limited capability for the markets that Pliant participates in. PLA is most typically found in rigid thermoformed trays for short shelf-life applications such as the packaging of fresh produce.

**Q: There are a lot of definitions on this topic out there; can we better define them?**

A: The following is a short summary we have developed to date to help sort out these definitions.

**Sustainable** – Generic term used to express the long-term viability of something.

**Environmentally Friendly** – Understood as being better for the world.

**Biobased** – Referring to the origin of the feedstocks of a product as new carbon needs a percentage designation to be meaningful.

**Renewable** – Referring to the feedstocks being renewed in a certain time frame (ex. corn, wheat, bacteria, and paper).

**Natural** – Referring to origin of feedstocks. Oil, natural gas, corn, bacteria, wheat are all natural.

**Degradable** – Process of fragmentation. Chemical, biological, physical are examples.

**Biodegradable** – Process of organic matter being consumed by micro-organisms and converted to energy and waste products.

**Compostable** – Specific biodegradable disposal in which moisture, oxygen and heat content are professionally managed. Organic matter biodegrades swiftly – typically in 180 days or less.

**Q: Does Pliant currently offer a “biobased” or “compostable” film?**

A: At this time we do not have any commercial clients. Pliant maintains an active approach to understanding the various resins being developed and will gladly evaluate new opportunities as they are needed. In order to be marketed as either biobased or compostable, a film must either meet or exceed ASTM Standards D-6866 or D-6400, respectively.