

Packaging, Paper and Post Consumer Recycle

Over the years the transition away from paper to plastic as a component of a flexible package was due primarily because of the value plastics offered. The utilization of paper as a component in the package structure has been limited and specialized.

Today the awareness of package biodegradability, Carbon Foot Printing and Life Cycle Green House Gas (GHG) emission analysis is changing the packaging landscape. The balance between performance, (usually provided by a plastic substrate) and biodegradability requires a unique approach. As consumer packaging companies consider solutions which are more environmentally responsible, paper substrates are getting a closer look.

The ideal goal would be to offer a package that is 100% biodegradable or 100% recyclable. Even if consumer companies do not currently offer 100% biodegradability many are considering package enhancements that provide biodegradable value or recycled content, even as low as a 10% recycle content.

Recycled paper, used in many other applications like tissue and fine papers, has not seen a wide use in the flexible packaging arena. In recent years the interest in recycled paper packaging has grown. However, recycled paper is not all the same. There are limited guidelines regarding the source and type of recycle paper content in packaging.

The fact is that most consumers do not really know which type of recycled paper is incorporated into a package. Recycle type, appropriate use and quality of recycle content are very important. Here are the basic recycle type categories:

Pre-Consumer Waste – This fiber (or paper for that matter) has never seen a consumer. It usually contains leftovers and cutoffs from a paper mill's production process or the same from paper converting plants such as envelope manufacturers and printers. This paper waste is collected and shipped back to a paper mill for recycling prior to hitting the consumer waste stream.

Post-Consumer Waste (PCW) – This is the paper you so carefully place in the paper-recycling bin every week. It has reached the end user, and thus is qualified as post-consumer waste.

Total Recycled Fiber (TRF) – The complete amount of recycled fiber, pre- and/or post-consumer, that is used to make this paper.

Of the three categories, Post Consumer Recycle paper provides the greatest positive impact because it has had at least one use prior to reintroduction of the paper back into the process.

A more recent development is the introduction of a Post Consumer Recycled paper with FDA compliant for direct food contact. There are virgin fiber papers available for use in the food industry that meet the FDA guidelines for direct food contact, but the development of a food contact safe recycled material is the latest change in the paper packaging landscape.

The FDA compliant Post Consumer Recycle papers use only a bleached pulp source which can be utilized in the manufacture of either 100% bleached Kraft paper or used as an ingredient in the manufacture of a Natural Kraft paper. It is produced using an Elemental Free Chlorine (ECF) bleaching process during the reprocessing phase (prior claims with respect to the bleaching process are not known). The pulp is offered in a baled form with a 50% moisture level with a maximum brightness of 80%.

At this time there is only one domestic supplier of this grade of FDA approved Post Consumer pulp which means that supply is limited. The cost of this pulp is higher than other purchased bleached pulp and transportation also becomes a cost factor. Traceability within the warehouse, process and use should not be a concern as long as the paper mill has adequate GMPs, (Good Manufacturing Practices).

Currently only a few paper mills are willing to incorporate the FDA approved post consumer recycle into their process. Several reasons are that the recycled fibers are more difficult to process on the paper machine and there is a risk that all of the impurities have not been removed.

Even though the use of recycled fibers offers a better sustainable solution there are other considerations. Responsible paper manufacturers have developed sustainable policies regarding the source of their fiber by following the guideline of either; Forest Stewardship Council (FSC) or Sustainable Forest Initiative (SFI). In addition natural fiber pulps, which use a chlorine-free process, are under consideration as a replacement for bleached paper, eliminating the concern about the use of bleaching chemicals.

No matter what choices are made on the components for food packaging, paper will play a larger role in the future. This renewable, recyclable, biodegradable, resource, with post consumer recycle content provides attractive environmental benefits for packaging applications.

1. "Supply" includes consumption of all paper, corrugated and paperboard, including construction paper and board. "Recovery Rate" is the ratio of total paper, corrugated and paperboard recovered to supply.

2. Provided by Sabine Lenz of PaperSpecs.com

August 22, 2008