BIOPLASTIC LABELS & TAGS

Bioplastics are a new generation of biodegradable and compostable plastics, manufactured with renewable raw materials like starch, cellulose, soy protein, lactic acid, etc. They are non hazardous in production and when discarded, decompose to carbon dioxide, water, biomass etc.

The outlook for bioplastics has changed significantly in the last ten years. When initially introduced, they were viewed as the answer to the solid waste issues in the US. However, their performance did not meet user expectations and significant confusion existed as to their appropriate uses and characteristics. Most of those issues have been resolved. It is estimated that US degradable plastic demand will grow 14% CAGR through 2010 as actual performance characteristics are better understood and prices and properties become more competitive with conventional plastics, especially given the recent price surges in petroleum based products. Biodegradable and compostable types will lead gains, especially polylactic acid (PLA). **Tagging/labeling is one of the key applications critical to the future growth of these products.**

PLA is a biodegradable and compostable bioplastic manufactured from corn. It can be a clear and/or white substrate, with the same look and feel as polyester tags and labels. It is odorless and completely non-allergenic. It can compost within 45 days resulting in eco-friendly oxygen, water and carbon dioxide being returned to the environment. It starts with starch from corn and is milled into corn sugar dextrose, then converted into lactic acid, and finally into polylactic acid (PLA). PLA pellets are sold to plastics converters, who melt them into fibers for films. When composted, PLA undergoes a 2-step degradation process. First, moisture and heat in the compost pile breakdown the PLA, creating smaller polymers, and finally, lactic acid. Micro-organisms metabolize the lactic acid, which is, itself, widely found in nature, resulting in carbon dioxide, water and also humus, a soil nutrient.

BENEFITS:

- Uses 20-50% less fossil resource
- Reduces greenhouse gas emissions; C02 reduced by 20-60%
- Made from annually renewable, safe resources.
- Made by environmentally friendly and safe manufacturing processes.
- Is compatible with any waste management system; clean burning for incineration, no leachate or toxics for landfill, and is compostable.

FEATURES:

- Excellent moisture transmission rate
- Excellent scratch resistance
- High transparency to UV light.
- Good rigidity for cutting and stacking.
- Ability to down gauge due to rigidity.
- No detectable genetic material can be found in PLA.

DEGRADABLE, BIODEGRADABLE, AND COMPOSTABLE PLASTICS.

Often these terms are used interchangeably, but it is important to make the distinction between these three categories.

Degradable Plastic. The American Society for Testing & Materials (ASTM) defines it as a “plastic, which will degrade under specific conditions.” A plastic may be degradable, but not biodegradable.

Biodegradable Plastic. The American Society for Testing & Materials (ASTM) defines it as “plastic which will degrade from the action of naturally occurring microorganism, such as bacteria, fungi etc.” A plastic may be biodegradable but not compostable (i.e., it breaks down too slowly to be called compostable).

Compostable Plastic. Composting is a method of waste disposal that allows organic materials to be recycled into a product that can be used as a valuable soil amendment. The American Society for Testing & Materials (ASTM) defines it as “capable of undergoing biological decomposition in a compost site as part of an available program, such that the plastic is not visually distinguishable and breaks down to carbon dioxide, water, inorganic compounds, and biomass, at a rate consistent with known compostable materials (e.g. cellulose) and leaves no toxic residue."

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