

Chem Systems' Process Evaluation/Research Planning program has published a new report: ***Commercial Outlook for Biodegradable Polymers (94/95S13)***.

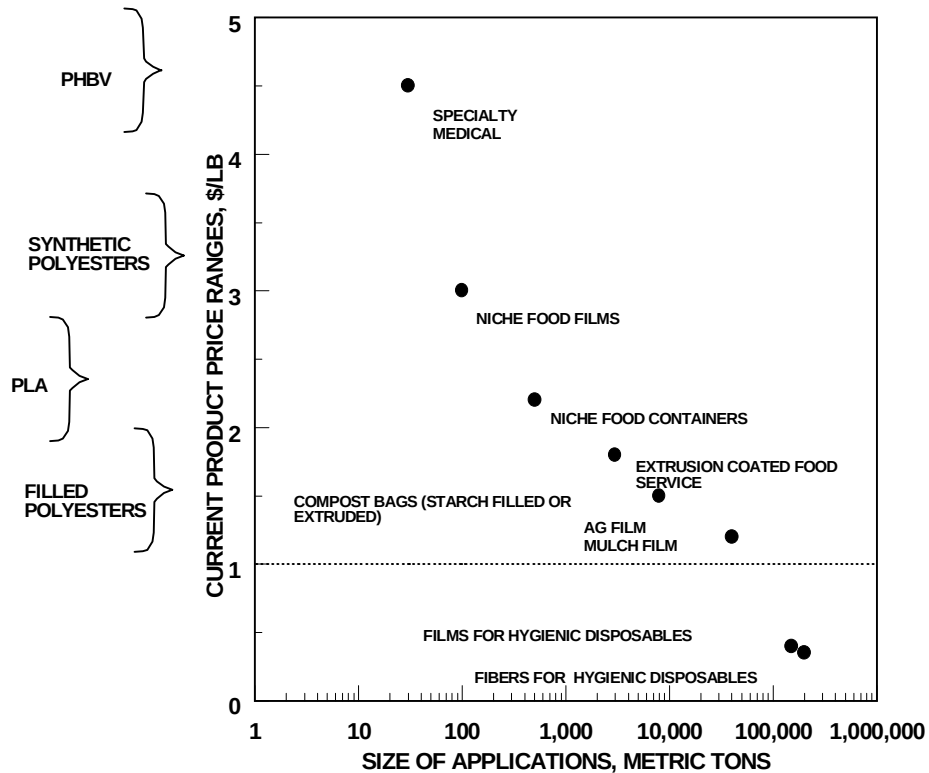
Although recycling has been established as the preferred method for treating paper, glass, and aluminum wastes, plastics waste has been approached from the perspective of source reduction, recycling, and incineration. Another alternative, the focus of much technical and commercial development at this time, is biodegradable plastics, which could be discarded and treated via composting, converting the plastic to its harmless organic constituents. Composting has been gaining popularity as a means of dealing with the problem of solid waste disposal.

Biodegradable and otherwise degradable polymers are mostly being made from renewable resources, in contrast to commodity type plastics made from petroleum based products. This new PERP report presents the chemistry, applications and market potential of polymers termed "intrinsically biodegradable," since they have been proven to be completely hydrolyzable and resorbable in a composting environment at normally prescribed conditions. In addition, the polymers discussed here are all thermally processable, meaning that they can be converted into usable plastic articles by the processes used for conventional plastic materials (i.e. extrusion, injection molding, blow molding). The group of polymer types addressed in this study is:

- Polylactide or polylactic acid and its copolymers
- Polycaprolactone
- Polybutyl succinate
- Polyhydroxybutyrate and its copolymers
- Blends of these materials with starches and other biodegradable materials
- Polyesters of various alcohols and acids

One method for evaluating potential demand for biodegradable polymers is to review the applications and necessary pricing to penetrate various end uses. Each application end use has a price hurdle associated with it. Converters often look for price equivalency, whereas end users have a better idea of the premium accepted by their customers or any added cost that could be passed on to their customers. The figure below illustrates this concept:

BIODEGRADABLE POLYMER THRESHOLD PRICE



The true market potential for biodegradable plastics will depend, not only on the selling price of the material but also on factors such as environmental pressure, legislation, the establishment of standards for degradability, the development of composting infrastructure, and the ability to overcome the problem of potentially contaminating the pool of recyclables. These additional factors are difficult to predict since they are external forces that may not be universally applied in the same manner. This report takes all these issues into consideration and forecasts regional demand for biodegradable polymers out to 2005.