

Recycled Plastic Represents a 97% Reduction in Energy Use

Executive Summary – MBA Polymers

Problem A considerable amount of scrap is generated in the production of plastic durable goods. For simple plastic products, typically packaging materials and other single material goods, scrap recovery is straightforward. For more complicated products, particularly multi-component durable goods, the plastic scrap is often contaminated with paint, fillers, metals, foams, and other materials (including mixed types of plastic) that make recovery by the manufacturer difficult. In many cases this end-of life plastic is placed in landfills. In selected cases a small quantity of durable goods can be sorted manually to purify the plastics, but in general, manual sorting is not cost-effective in the U.S. Recycled plastics compete with virgin product, therefore, the benefits in terms of energy and waste is compared with virgin plastics production.



Simultaneous Separation of Plastics

Solution MBA Polymers has developed and demonstrated a technology to separate and recycle various types of “contaminated” plastics. A commercial scale operation has demonstrated the advantages of size reduction, materials liberation, materials separation and cleaning technologies to recover this plastic. The plant is capable of

running at rates of up to 5,000 lb/hr and purifying as many as three plastics, although for economic reasons only on plastic is most frequently targeted.

The systems used to separate various plastic fractions are innovative for their simplicity of design, low capital costs, low operating costs, operating flexibility robustness, and precision of separation capabilities. The process is automated and continuous.

This process can reduce the demand for new plastics, meaning that a plant producing 500 million pounds of product per year will save 37,500 But/lb. This figure includes a reduction of natural gas consumption from 12 billion to 0.75 billion cubic feet.

MBA receives materials from a growing number of producers of durable goods who are taking responsibility for the return of obsolete products. This is particularly dramatic in the computer industry where products are replaced well before the end of their useful life due to advances in technology. As with manufacturing scrap, the returned plastic is contaminated with a variety of other materials. Wherever possible useable components and precious metals are recovered, the plastic housing (the largest component) is discarded. Only about 2% of the plastic from computers is recovered today, largely because of technical, economic and infrastructure barriers.



The Finished Produce ~ Ready for Re-Use!