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ENVIRONMENT

New life for old plastics

MBA Polymers aims to provide affordable recycled plastics

By Russ Arensman

Millions of pounds of plastic, particularly soft drink bottles, are recycled annually, but most of the so-called “engineered plastics” used by the electronics industry end up dumped into landfills, mixed into asphalt pavement or burned for fuel.



**Dr. Mike
Biddle, CEO
MBA
Polymers**

Although it’s technically feasible to recycle these plastics, it generally has been too costly and difficult to separate them from metals and other contaminants. It’s also been tough to identify and sort out the often complex mixes of different types of plastics, which may be painted or coated with various substances for radiation shielding or retarding flame.

For the electronics industry, the lack of affordable plastic recycling is a two-pronged challenge. Many electronics makers would like to use more recycled

plastics, if only to burnish their “green marketing” credentials. But until recently, adequate supplies of suitable recycled plastics have been difficult to obtain. At the same time, electronics companies wanting to recycle their end-of-life products have found few markets for their plastic scrap and have had to pay up to \$30 to \$110 a ton to dispose of it at a landfill or incinerate it, and even more if it goes to specialized salvage and recycling firms (for more on the industry’s recycling efforts, see “Ready for recycling?” page 108)

That may be changing, however, thanks to the efforts of Richmond, CA-based **MBA Polymers Inc.**, which has spent the past six years developing cost-effective technologies

for recycling engineered plastics used in the housings of PCs, telephones and other electronic equipment. Last year, the company began testing a process that, for the first time, makes it possible to economically recycle engineered plastics. This September, the company launched a new production line that should, at full capacity, increase its output more than six-fold to 40 million pounds of recycled plastic per year.

“We’ve made the economics much more attractive, and that’s what everyone’s been waiting for,” says CEO Mike Biddle, a former scientist at Midland, MI-based **Dow Chemical Co.**, who founded MBA Polymers six years ago as a plastics-recycling consultancy.

The company starts by grinding up bales of computer housings and other electronics scrap into small pieces. Magnets, then eddy-current separators, are used to extract the ferrous and non-ferrous metals. Jets of air separate out foam, paper and other lighter materials. Then a proprietary sorting, cleaning and testing process further purifies and separates the remaining plastic material into different varieties. “The really high-tech part is separating all these different plastics,” says Biddle.

By September, MBA Polymers was marketing five varieties of recycled plastics, and planned to add several more. Biddle expects to sell the recycled plastic, packaged in huge bags of extruded pellets, for as much as 70% of the 50 cents to \$1 per pound that virgin plastics typically command. The key to commanding—and getting—those relatively high prices is MBA’s painstaking, automated testing system that monitors the plant’s output and assures buyers they are getting the exact plastic they need.

There should be strong demand for MBA Polymers’ products, especially if it can keep lowering its costs while boosting production. “Plastic is valuable stuff,” says Renee St. Denis, environmental business unit manager for **Hewlett-Packard Co.** (HP), Roseville, CA, who notes that plastic accounts for much of the materials cost in PCs and other tech products. HP has long wanted to use more recycled plastics, she says, but “there just hasn’t been sufficient supply.” Officials with Sony Electronics Inc. (a Park Ridge, NJ-based unit of **Sony Corp.**) and **IBM Corp.**, Armonk, NY, echo that sentiment. “If we build a product with recycled plastics, we need a lot of it,” says Mark Small, Sony’s San Diego-based vice president of corporate environmental affairs.

Michael Fisher, director of technology for the American Plastics Council in Arlington, VA, says other companies are recycling engineered plastics, but only from relatively uniform sources, such as factory manufacturing scrap. Before MBA Polymers, the only recycler of assorted engineered plastics was **Conigliaro Industries Inc.**, Framingham, MA, which mixes ground computer housings and similar plastics into asphalt road-patch material.

“MBA has begun to broaden the available [plastic] feedstocks for recycling,” Fisher says. “They’ve certainly come a long way in the past 18 months.”

The privately held MBA Polymers drew its initial funding from grants and research contracts from the electronics, auto and sporting goods industries, as well as federal and state agencies. Its shift to commercial production is being funded by outside investors such as San Francisco's American Industrial Partners. Biddle declines to reveal how much the company's new production line cost, but says the company has spent \$15 million to date on technology development and construction. While MBA Polymers isn't profitable yet, Biddle expects it will be by next year. By then, he's hoping to launch a new, significantly larger plant in Europe or Japan. —*Russ Arensman*