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Pollution Prevention

**Governor's Pollution Prevention
Award Recipient - Amko Plastics
Inc. and George A. Makrauer**

Innovation and continual improvement are keys to not only reducing, but actually eliminating waste streams, and for over a decade, Amko Plastics Inc. and George Makrauer, President/CEO, have shown that it pays to be a leader.

The Governor's Awards for Outstanding Achievement in Pollution Prevention have been presented since 1986. Amko Plastics Inc. and George A. Makrauer received one of five awards given in 1995. Governor George V. Voinovich presented the eighth annual awards on February 7, 1995.

These awards recognize outstanding commitment to improve Ohio's environment through pollution prevention. Evaluation criteria for the awards included: the overall effort to reduce waste at the source, recycle or recover materials, or conserve energy; soundness of approach; cost effectiveness; ability of the program to serve as a model for others; and effectiveness in promoting prevention as the preferred long-term approach.

What is Pollution Prevention?

Pollution prevention is the use of source reduction techniques to reduce risk to public health, safety, welfare and the environment and, as a second preference, the use of environmentally sound recycling to achieve these same goals. Pollution prevention avoids cross-media transfers of wastes and/or pollutants and is multi-media in scope, addressing all waste and environmental releases to the air, water and land.

**Amko Plastics
Inc. and George
A. Makrauer**

Amko Plastics Inc., Cincinnati, manufactures specialty flexible packaging films, bags, pouches and envelopes for consumer, retail, commercial and food packaging customers. Amko not

only has reduced waste generation in nearly all aspects of its manufacturing process, but also has pioneered new source reduction technologies for the U.S. film producing and film printing industries. George A. Makrauer is president/ chief executive officer of Amko.

**Pollution
Prevention
Activities**

At Amko Plastics, the commitment to pollution prevention starts at the highest level of management and spreads throughout the work force. It is Amko's philosophy that if the pollution prevention effort is not company-wide, it cannot be a company success.

George Makrauer demonstrates his commitment through his willingness to introduce new materials and

technologies with potential to prevent pollution. Amko Plastics was the first U.S. film and bag producer to introduce a new thin film, linear low-density polyethylene. Because of their superior strength, these films allowed for a 25 - 40 percent reduction of raw materials in manufacturing and waste disposal, as compared to the thicker plastic films, and made it possible for plastic bags to become competitive with paper bags. Amko also was the first plastic film printer to use water-based inks in complete daily production, reducing alcohol air emissions by approximately 85 percent.

In addition to lowering the alcohol content of inks, Amko has replaced all inks that contain potentially toxic heavy metals with non-heavy metal counterparts. This has resulted in the elimination of hazardous wastewater and sludge



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from printing operations. Amko also has eliminated the use of perchloroethylene in the production of its printing plates.

Despite the fact that Amko operates 7 days per week, 24 hours per day, reduction of toxic and hazardous materials allowed the company to reduce its hazardous waste generation to the point that it was classified as a Conditionally Exempt Small Quantity Generator. Since receiving the award, Amko has replaced kerosene with a non-hazardous alternative material for use as a metal cleaning solvent in machine shop operations, completely eliminating hazardous waste generation.

Amko's plastic waste recycling program includes its own industrial waste and post-industrial waste purchased from others, and "closes the loop" by also including post-consumer plastic bags collected from college stores and their customers. The company recycles its office waste and cardboard, and has reduced energy consumption through heat recapture systems on some equipment.

For nearly 10 years, George Makrauer and Amko Plastics have extensively shared the company's successes in environmental technological development by making presentations to and consulting with representatives of organizations in the U.S. and abroad. Private sector and public sector organizations from the U.S. and other countries visit Amko to learn about its efforts, successes and challenges in developing sustainable manufacturing practices. A number of these companies have adopted Amko's practices.

Looking Ahead

Amko is in the process of evaluating a new breakthrough resin for making plastic film. This could offer the opportunity to achieve both higher quality and lower waste rates, using even smaller amounts of alcohol in water-based printing inks, further reducing VOC air emissions. A new aqueous process printing plate-making system is being installed to reduce the use of non-hazardous but petroleum-based chemistry. The solid component residue from the printing ink wastewater treatment

and recycling system is being evaluated for potential recycling into a rust-protective coating.

The company expects to be ISO-9001 certified by the end of 1995 and is exploring the ISO-14000 Environmental Management System.

For More Information

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This is the twenty-fifth in a series of fact sheets Ohio EPA has prepared on pollution prevention. For more information, call the Office of Pollution Prevention at (614) 644-3469.

The Office of Pollution Prevention was created to encourage multi-media pollution prevention activities within the state of Ohio, including source reduction and environmentally sound recycling practices. The office analyzes, develops and publicizes information and data related to pollution prevention. Additionally, the office increases awareness of pollution prevention opportunities through education, outreach and technical assistance programs directed toward business, government and the public.
