

Pressure-Sensitive Adhesives



The new tropical flower series of postage stamps is totally compatible with recycling—thanks to a cooperative research effort of the United States Postal Service (USPS) and the USDA Forest Service, Forest Products Laboratory (FPL).

A major technical and environmental challenge in paper recycling is removing contaminants from recovered paper pulps. Contaminants from pressure-sensitive adhesives (PSAs), used for stamps, stickers, and labels, stick to paper machine felts and wires, causing major operating problems. The USPS purchases a large amount of domestic PSA products. It launched an initiative to develop postage stamp adhesives that placed no additional burden on paper mills but still upheld USPS performance requirements (including permanent adhesion to envelopes and the ability to withstand long-term aging).

Representatives from the USPS, FPL, Specialized Technology Resources, Inc. (Enfield, Connecticut), and industry formed a team to develop PSA stamp products that could be recycled successfully in a typical recycling facility. This resulted in the development of a pilot-scale separation sequence that aids in the removal of adhesives in recycled paper pulps.

This research partnership is making progress towards resolving environmental problems caused by PSAs. New laboratory, pilot, and mill testing protocols have been established for recyclability of PSAs, and an information database on newly developed PSAs has been established.

On May 1, 1999, the USPS released the first issue of its tropical flower series using new, reformulated PSAs that are totally compatible with recycling. The results of trials at six

U.S. paper mills correlate well with previous FPL pilot testing, and industry representatives have endorsed FPL pilot testing as a way to predict recyclability of a PSA in mills.

Technical descriptions of the work team's results are contained in the references listed. Final results of the project were presented at the Technical Association of the Pulp and Paper Industry (TAPPI) Recycling Symposium held in March 2000 in Washington, DC.

On April 26, 2000, the President signed Executive Order 13148, which includes implementation strategies for government agencies to purchase and use new environmentally benign PSA products.

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References

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