SELECTING PLASTIC FILM PRESSURE SENSITIVE LABELS FOR PET PACKAGING - AN APR DESIGN™ GUIDE BULLETIN

THE ISSUE – PLASTIC FILM, ADHESIVE AND INK FROM PRESSURE SENSITIVE LABELS CAN CONTAMINATE RECYCLED PET

Pressure sensitive labels printed on a polymer film are often used with PET packaging. It is important that these labels release, and separate cleanly from the package, in the wash step. If not, the film, ink and adhesive all contaminate the recycled PET causing off-color and haze which reduces the value of recycled PET.

• Polypropylene (PP) is often the substrate for pressure sensitive labels. PP is not compatible with PET and will cause haze at as little as 10 ppm content.
• PET is melt processed at 275º C (525º F). Adhesives used with labels are not stable at this temperature and so degrade and discolor PET to a yellow-brown shade.
• If the label adheres to PET, the ink binders and pigments will discolor PET.
• If the ink does not remain adhered to the label in the recycle process, the ink can contaminate wash water and stain recycled PET.
• The label stock must float in water to separate cleanly from PET that sinks in water in the “float-sink” separation step.

Today’s pressure sensitive film labels can have a negative impact on 4 of 7 key recycling steps!

THE SOLUTION – SPECIFY PRESSURE SENSITIVE LABELS KNOWN TO PASS APR TEST METHODS

The APR has developed the Bleeding Label Test as well as the Critical Guidance Test for Pressure Sensitive Labels. Label suppliers and brand owners can use these tests to confirm that pressure sensitive labels, adhesives and inks will not interfere with PET recycling. Leading label suppliers employ these test methods and supply labels that meet test criteria, and can provide test data verifying recycle performance.

Properly selected labels will not interfere with recycling!
APR RESOURCES – PROMOTING APR DESIGN™ PRACTICES

A number of APR member companies can speak with you about pressure sensitive labels for PET packaging that do not interfere with recycling. These members, along with contact information, are profiled on the APR website www.plasticsrecycling.org/members and include:

Labels and Label Materials
Avery Dennison, Jindal Films, The Kennedy Group, Spear, and UPM Raflatac

PET Bottle Design and Supply
Amcor and Berry Plastics

Laboratory and Consulting Services
Plastics Forming Enterprises and Plastic Technologies Inc.

ILLUSTRATIONS OF GOOD PRACTICES

Spear RC™ and the Kennedy Group’s PureVue™ are commercially available labels that have received Recognition for passing the APR Critical Guidance Test for Pressure Sensitive Labels. The photo shows that standard pressure sensitive labels can remain adhering to PET flake even after hot caustic wash, where labels that meet APR Critical Guidance testing show 100% label removal.

The two injection molded PET plaques shown in the photos (right) illustrate that APR Recognized labels have no impact on the color or haze of PET. The plaque on the left was made from control bottles that had no label. The plaque on the right was made with bottles that employed PureVue™ labels.

ILLUSTRATIONS OF UNFAVORABLE PRACTICES

The photo below illustrates a film label that is still adhered to PET that sinks in a beaker of water. The film is white because the ink washed off in the caustic wash.

The photo below shows a pressure sensitive label that has good ink adhesion after caustic wash, and separates from PET flake, but does not float in water. The label and ink can contaminate PET in a float/sink tank.

The Association of Postconsumer Plastic Recyclers (APR), represents over 90% of the postconsumer plastic recycling capacity in North America. APR member companies include plastics recyclers, brand owners and supply chain stakeholders who support a strong market for postconsumer plastics. The APR Design Guide outlines package design features that enhance the ability to recycle and minimize contamination in postconsumer plastics.