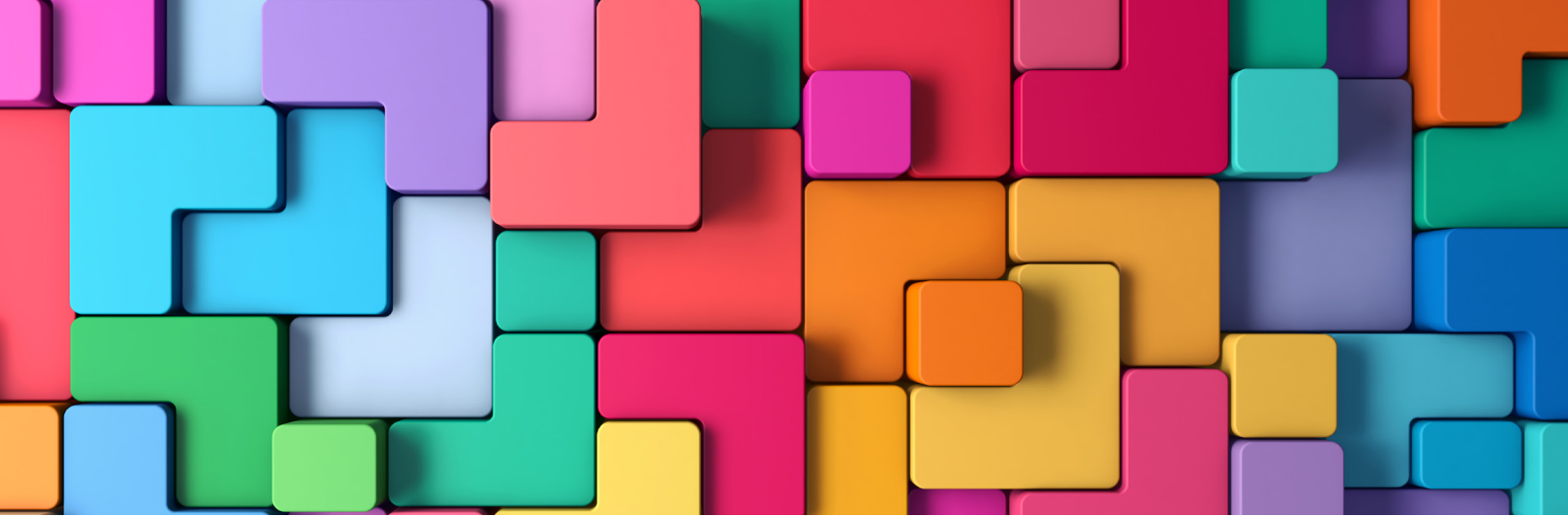

SOLUTION BULLETIN

Post Consumer Recycled (PCR) Color Prediction Service

A Digital Tool to Support PCR Resin Coloration

CHALLENGES IN COLORING PCR

With rising EU-wide targets to incorporate greater quantities of recycled plastics in packaging items, solutions are required that improve the quality of the recyclate so that higher quantities of PCR can be utilized within a circular economy approach.

Coloring PCR brings further challenges. Inconsistent streams mean that PCR resin quality varies from virgin to recycled or from recycled to recycled, creating color deviation for existing products. This, in turn, creates issues for convertors and brands who need to achieve consistent product quality across product lines, regions and markets.

A challenge faced when coloring PCR resins include recyclate materials with an undertone or opacity that can restrict color options in PET, rPET and rPP. Lightest colored recycled materials are therefore in high demand for all applications, limiting market availability.

In order to meet demand and avoid delays, multiple PCR sourcing outlets are often necessary and multi-pass recycling is utilized, both of which can increase the risk of polymer degradation impacting mechanical properties and creating potential product safety issues due to food contact concerns.

Convertors and brand owners need to make educated choices for their recycled materials based on formulation expertise and data science to help achieve a consistent packaging product.

A NEW PCR COLORATION TOOL

Avient has developed a digital tool to help assess the impact of colored, recycled resins (PCR) prior to laboratory trials.

The tool can digitally illustrate, in real-time, the color possibilities or limitations of certain types of PCR, simplifying the overall color decision-making process during product development and launch.

Based on color science, the tool helps optimize the ratio of virgin resin to PCR in order to achieve the best acceptable rendering, proven by scientific data.

It can be utilized on a colored resin of any given shade, and aims to decrease complexity when different grades of PCR are used. It can also help shorten launch time for new product ranges, allowing fast and reliable checks prior to initiating sample development.

AVIENT™

KEY CHARACTERISTICS

- Helps transition to high levels of PCR
- Facilitates transfer from one PCR to another
- Considers mixed grades of PCR
- Works with transparent, translucent and opaque colors
- Globally available with local expertise

MARKETS & APPLICATIONS

- Recycled PET and polyolefins
- Packaging and consumer products
- Injection molding
- EBM (monolayer bottles)

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