

Carolina Color Corporation's G2: Proven Success For Post Consumer Resin (PCR) Molding



G2 Improves Dispersion of Color and Resin Performance and Reduces Let Down Ratios

Today, in an effort to reduce the amount of waste going into landfills and the overall cost of part molding, most molders have been able to incorporate recycled resin into their products.

One recycled resin option for molders is Post Consumer Resin (PCR). PCR is often re-pelletized at a compounder and then sent to a molder, where it is blended with virgin resin before being molded into a final product. During the blending process, the PCR is let it down at a variety of percentages and blended with a virgin material, enabling molders to use as much as 20-100% post-consumer regrind in the final product.

The challenge is pigmenting PCR since inconsistent shades can range from yellow to whitish. The primary issue is having to add enough colorant efficiently and consistently to overcome the PCR shade. G2 allows molders to add much higher levels of pigment per pellet without negatively affecting their process. In order to achieve the same levels of pigment (coloring strength) with liquid color, Traditional methods, such as Liquid color could cause screw slippage and conventional concentrate require high let downs ratios that negate the cost use factor of the PCR.



Another important factor is dispersion. Studies have shown that inconsistent dispersion of colorant can negatively impact performance characteristics of the final part. The biggest single threat is that improper dispersion can interfere with molecular bonds, “resulting in pigment agglomerates acting as defects in the polymer matrix and impairing the mechanical properties of the finished product.”¹ Thus, consistent dispersion is crucial when pigmenting PCR.

With other colorant options, additional machinery and techniques are required to help with dispersion, as “the use of plasticating screws with enhanced mixing capability or static mixers would be recommended.”¹ However, a more cost-effective option is now available --- Carolina Color’s G2 --- an advanced color concentrate.

Carolina Color G2 Proven Success With Post Consumer Resin (PCR)



G2 pellets, patented by Carolina Color in 2008, are exceptionally well dispersed and effectively distribute in both large and small parts, enabling consistent pigmentation of recycled resin for a number of applications.

Molders using PCR that have made the switch to G2 have been able to overcome molding challenges brought on with other colorant options in the market. G2 has proven to keep the critical molecules of the resin intact, thus reducing any risk of the final part failing to meet performance expectations. The high pigment levels in G2 pellets can eliminate common issues with “hue” of the recycled resin compared to conventional coloring methods. Plus, molders typically see let down ratios reduced from 6-8% down to 2- 4% with G2.

Carolina Color’s G2 product line has performs well across diverse applications, including outdoor durables, packaging, industrial, non-automotive transportation, and much more. Convertors continue to be impressed by this game-changing technology. Whether it is injection, extrusion or blow molding, G2 continues to hit the mark.

Carolina Color Corporation --- a successful, family-owned company since 1967 --- serves colorant needs from ISO 9001:2008 certified locations in North Carolina and Ohio. For more information about G2 visit: www.carolinacolor.com

Reference:

1 - <http://www.materialstoday.com/polymers-soft-materials/journals/polymer-testing/>