



Did You Know Series Coloring Large Durable Plastic Products

Chroma Color's patented G2 product line reduces overall cost for outdoor durable products with lower let down ratios, higher loadings of additives and lower production costs due to ease of use when compared to other colorant options.

The outdoor plastics product business has grown dramatically in the past decade due to improved materials, processing and the ability to mold in color. With such growth, the market has become very competitive and thus molders are constantly on the look out for ways to reduce costs while delivering products that are both esthetically pleasing and meet performance expectations..

Many molders have found that using highly loaded colorant, be it in solid pellet or liquid form, can reduce cost. The fundamental idea is to add smaller quantities of more concentrated colorant to virgin resin in order to achieve the same end result as opposed to using larger amounts of conventional colorant. There are numerous benefits to doing so, not the least of which can be improved physical properties.



In 2008, Chroma Color patented a new product that has revolutionized the colorant industry. The G2 product line is able to load pigments and additives too levels never considered, let alone achieved in a commercial product. The idea of highly loaded "super concentrate" has circulated in the industry for some time, but had fallen short of performance expectations on many levels. Not only has G2 brought new cost-saving possibilities when using concentrated color, but the pellets are exceptionally well dispersed and effectively distribute in both large and small parts.

Continued Page 2

The following examples outline various ways in which outdoor product manufacturers have been able to benefit from G2.

Plastic chair manufacturers reduce let down ratios and color handling cost:

In 2013, the lawn, garden and agricultural packaging demand reached \$1.7 billion in the U.S alone. Plastic lawn chairs are one of the most popular outdoor consumer products in this growing market due to their convenience, ease of use, light weight and ability to outlast wood in harsh environments. With such popularity and wide spread use, many manufacturers are producing similar products. The only way to succeed in such a competitive marketplace is to reduce production costs, which has led manufacturers to make the switch to G2.

With G2, lawn chair manufacturers have been able to reduce let down ratios in some cases from 4% to 1%, while still adding sufficient UV/AO stabilizers to make a product that lasts and keeps consumers happy. Using traditional colorant options in high-volume manufacturing environments can add cost due to additional material handling requirements, and in the case of liquid color, increased housekeeping challenges. Other hidden costs associated with liquid color are the unpredictable nature of hose kit & pump replacement.

Continued Page 3



Roll Out Cart (ROC) Molders Reduce Cost and Meet Warranty Claims With G2

Roll out carts are a big business, especially considering that most households in the United States have at least two. At almost \$60 per unit, the ROC market is worth hundreds of millions annually and justifiably requires significant investment by molders. For instance, a single cart mold can cost \$500,000. As well, manufacturers offer a 10-year warranty to consumers and cities that purchase carts for waste disposal programs, so they need be able to add adequate UV/AO stabilizer while controlling cost.

Chroma Color's G2 has helped roll out cart molders reduce cost through let down reductions from 3% to 1%, while still delivering enough UV/AO to support a 10-year warranty. And since G2 comes in solid pellet form, molders can bypass a large amount of cost creep found with liquid color in the form of replacing hose kits & pumps, added housekeeping and other costs related to consolidation and agitation. Using highly loaded G2 is also a space-saver given lower inventory requirements and thus fewer drums or gaylords.

Continued Page 4





Large part sheet extruders and thermoformers see reduced material needs, improved extruder efficiencies, more consistent sag rates, reduced scrap, improved cycle times along with Increasing UV Protection and Improving Gloss by Switching to G2 Product Line

As an example, Port-A-Potty customers are largely concerned with the bottom line price point, so manufacturers must be extremely cost conscious and look for ways to reduce production costs. In thermoforming Port-A Potty panels, for instance, manufacturers must focus on the sag across their entire color pallet in order to maximize cycle time efficiencies and minimize scrap generated when going from color to color. They also need to ensure that parts will remain strong and will not become damage due to UV degradation or other external thermal sources. While this can usually cause an increase in cost during manufacturing, G2 can achieve less sag than traditional color concentrate, without increasing cost.

Moving up the pipeline, sheet extruders that sell into the Port-A-Potty market report that they have been able to reduce production cost by switching to G2 for a number of reasons. Quantifiable improvements in extruder efficiencies have led to improvements in extruder throughput. Further, sheet made using G2 allows for panels with reduced warp, enabling the molder to produce parts quicker and of higher quality.

Continued Page 5



Chroma Color's G2 product line has proven performance in 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.

Chroma Color Corporation is a leading specialty color and additive concentrate supplier serving virtually every plastics process in a diverse range of markets that include packaging, healthcare, pharmaceutical, wire & cable, consumer products, building materials, and many others. Chroma Color's strategy includes robust organic growth in key markets and inorganic growth through value-enhancing acquisitions. Chroma Color's extensive technical leadership, manufacturing expertise, and game-changing concentrate technologies have delighted customers for more than 50 years. For more information, please visit www.chromacolors.com

