

## Cutting-Edge Design Without The *Cutting* Edge



Safety is critical when designing children's products, therefore it was the first order of business when Graco Children's Products (Elverson, Pa.) designed its new mobile entertainer, a.k.a. walker, with a patented see-through window tray. The design required the clarity of glass and the strength to withstand the continuous impact of a rambunctious toddler bumping into walls and banging on the tray . . . not to mention the scraping of petrified Cheerios and disinfecting the remains of animal crackers and strained peas and carrots. A daunting challenge? . . . not for Eastman Chemical Company, whose *DuraStar* polymer satisfied the tough requirements of Graco's product designer and manufacturer.

A leader in progressive children's products, Graco designed the innovative mobile entertainer to include a window in the tray so that a child can see his or her feet and the floor. "Our customers provided the inspiration for this first-of-a-kind design," said Judith Friede, Graco product marketing manager. "We design our products to satisfy the needs of parents and children. The see-through window provides added play value for parents while increasing infant stimulation." The next hurdle was to efficiently manufacture this unique design to yield a safe, cost-effective and appealing product.

Graco was looking for a material with the strength and clarity of polycarbonate but more cost-effective in the quantities needed. Timing played an important role. According to Ann Mathis, Eastman market development representative, "Graco received our *Color Your World* promotional mailer and samples of *DuraStar* polymer around the time they were looking for an alternate resin. Eastman's material not only met their durability and clarity requirements, it also provided the most cost-effective alternative."

Concerns about child safety are always at the forefront when designing and manufacturing children's products. The window was designed for manufacture as a tongue and groove part with a few fasteners and to withstand impact without shattering into pieces. Graco conducted impact resistance tests on *DuraStar* polymer and selected 2010, a high impact resistant model that includes a mold release

"*DuraStar* polymer was easy to process, and the part readily released from the mold," said Al Schmidt, Graco manufacturing engineer. "We had a smooth transition to the manufacturing process and plan to use the polymer again on several other clear parts." Schmidt added that the mobile entertainer has a patent pending and also meets FDA safety requirements.

"The polymer's long-term clarity and resistance to household cleaners makes it ideal for children's products because they tend to get handed down from generation to generation," said Mathis. "And it maintains its clarity without yellowing or hazing."

Thanks to innovative materials like *DuraStar* polymer, Graco can continue to innovate safe, cutting-edge children's products without the *cutting* edges.

[http://www.eastman.com/News\\_Center/News\\_Archive/Product\\_News/2001/010227c.asp](http://www.eastman.com/News_Center/News_Archive/Product_News/2001/010227c.asp)

The mobile entertainer is available in several versions and can be found at most major retailers.

Graco Children's Products is a leading designer and manufacturer of juvenile products. It is a division of parent company Newell-Rubbermaid and includes the Graco and Century brands.

Eastman Chemical Company, headquartered in Kingsport, Tennessee, U.S.A., manufactures and markets plastics, chemicals and fibers worldwide with 1999 sales of US\$4.59 billion. The quality systems of all *Eastman* plastics are registered under ISO 9000 except at plants in operation less than one year.