Press Information

## New lighting technology from DuPont Automotive sheds light on cost-reduction solutions for global automotive lighting

Stevenage, June 2006. Automotive headlamps – a significant opportunity to add personality to vehicle styling – can now be manufactured more cost effectively through a new "Design-Materials-Processing" solution developed by DuPont Automotive. A combination of new DuPont™ Crastin® PBT grades, innovative manufacturing techniques plus design and development support enables direct metallization of automotive headlamp bezels, the trim ring that not only supports the headlamp, but provides distinction in design.

This "art-to-part" offering generates up to 40 percent savings over traditional manufacturing methods. Commercial globally on millions of 2007 model year vehicles – including the Ford Focus, Chevrolet HHR, Lincoln Navigator, several BMW models, Nissan Titan and Skoda Octavia – the technology "is proven and poised to move from 'regional concept' to 'global trend'," said Steve Fecanin, DuPont Automotive global lighting development manager. "Next year customers will double the commercial adoptions."

"Design is pushing the technology envelope in lighting," said Fecanin. "Great looks are being achieved through innovative designs, but many lighting suppliers struggle to find materials to achieve designs for front-end contour, which often puts the headlamp very close to the bezel and drives temperatures above 150°C."

Headlamp bezels have traditionally relied on high-heat resistant polycarbonate or standard PBT, which requires painting. The DuPont solution taps the inherent heat resistance and thermal stability of Crastin® PBT and adds technical support to optimize design, tooling and machinery to enable direct metallization and ensure high yields for significant cost savings. The Crastin® technology provides exceptional surface appearance straight from the mould and is tailored to meet demands of today's newest requirements. The material is optimized for flow, surface gloss and stability in the high temperature environment.

Compared to high-heat polycarbonate, for example, savings are up to 40 percent on resin alone. Compared with painted parts, savings average 30 percent per part, not including savings captured by eliminating secondary paint operations.

"For the past six years, our global team has been working in the lighting value chain to develop new Crastin® grades and to make recommendations on design, tooling and machinery so that these parts can be produced with very low yield loss," said Chris Murphy automotive director – Americas, for DuPont Automotive Performance Materials. "Their commitment and drive throughout the global value chain epitomizes the value we can deliver – both in terms of innovation and cost savings – when we are engaged early in a program."

A steady evolution of Crastin® PBT product innovations now offers choices to customers who need a high gloss surface, part stability and higher performance. A new generation will be available later this year. "These are some of the most highly engineered PBT resins available," said Fecanin. Future applications include new rear taillights and offerings for steerable, HID headlamps.

"The future is bright for Crastin® in automotive lighting as direct metallization offers designers flexibility and freedom while reducing both overall costs and manufacturing costs," said Fecanin.

The DuPont Engineering Polymers business manufactures and sells Crastin® PBT and Rynite® PET thermoplastic polyester resins, Delrin® acetal resins, Hytrel® thermoplastic polyester

elastomers, DuPont™ ETPV engineering thermoplastic vulcanizates, Minlon® mineral-reinforced nylon resins, Thermx® PCT polycyclohexylene dimethylterephthalates, Tynex® nylon filaments, Vespel® parts and shapes, Zenite® liquid crystal polymers and Zytel® nylon resins and Zytel® HTN high-performance polyamides. These products serve global markets in the aerospace, appliance, automotive, consumer, electrical, electronic, healthcare, industrial, sporting goods and many other diversified industries.
DuPont is a science company. Founded in 1802, DuPont puts science to work by creating sustainable solutions essential to a better, safer, healthier life for people everywhere. Operating in more than 70 countries, DuPont offers a wide range of innovative products and services for markets including agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel

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