News Release

Autoliv Chooses Vandar® Polyester Alloy Over Thermoplastic Ester for Novel Air Bag Cover

Florence, Ky., Sulzbach, Germany, Shanghai, PR China, July 05, 2001 – Vandar Polyester Alloy Meets Requirements for Shape Maintenance, Air Bag Door Tear Seam, Paintability and Thermal Performance. Autoliv, a global leader in automotive safety, selected Vandar® thermoplastic polyester alloy over thermoplastic ester for a large, passenger-side, automotive air bag cover, because Vandar® thermoplastic polyester alloy is better able to satisfy shape maintenance requirements and still meet those for surface appearance, paintability and thermal performance. The thermoplastic ester was unable to provide the shape needed because of differential shrinkage between the layers of this two-shot part.

The 3.5 lb. part, which comprises one-third of the instrument panel on which it is installed, measures 16-in. long and tapers from 13-in. at its widest point to about 10-in. at its outer edge. It contains an air vent opening and allows air bag deployment through a 5- by 9-in. door.
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Caption: Autoliv automotive airbag cover molded from Ticona’s Vandar® polyester alloy.

The part is made in a rotary molding machine with two injection units and two molds. Each cycle injects the first shot in one mold and the second shot in the other. The machine then ejects the completed part, flips the tools 180° and repeats the cycle.

The first shot uses Vandar 9114 polyester to form a stiff, 4-mm-thick structural member that mounts to the deployment canister and shapes the part. This structural member is overmolded with a 2-mm layer of Vandar AB100 polyester, a softer grade that allows for texturing and receives a two-component, soft-touch urethane paint without the need for primers or adhesion promoters. The two polyester layers form a strong bond, so no adhesive is needed.

Vern Phillips, Principal Engineer at Autoliv, says the success of part is due to the material used and the tool they designed. “The two Vandar grades are highly compatible and give us a smooth profile and superior dimensional consistency,” he says. “The result is a good looking surface that conforms to the instrument panel. In addition, test after test has verified that the built-in seam tears properly, even at extreme temperatures and after prolonged exposure to UV radiation.”

“This is a novel component,” says Jim Zweng, Vice President of Engineering at Mayco Plastics, the injection molder that produces the component. “Two-shot air bag doors are rare, and the use of a rotating tool makes it especially unusual. The part also has an unconventional tear seam design. This involves a 2-mm-wide slot beneath the tear seam in the structural portion and a split line on the back side of the top layer that allows for deployment.”
More Information
Product property data sheets for Vandar® 9114 and for Vandar® AB100 are available online. For more information on Vandar® thermoplastic polyester alloy, contact:

Ticona
90 Morris Avenue
Summit, NJ 07901
USA
Tel: 1-800-833-4882
website: www.ticona.com

About Autoliv
Autoliv is a worldwide leader in automotive safety, a pioneer in both seat belts and airbags, and a technology leader with a wide product offering for automotive safety. The company, which has more than 30,000 employees at 80 subsidiaries and joint ventures in 30 countries, manufactures and provides support services for automobile impact airbags, seat belt systems, steering wheels, roll-over protection systems, and night vision systems. Autoliv tests these products at 19 crash test tracks in nine countries.

Autoliv sales in 2000 were $4.1 billion. Autoliv stock is listed on the New York Stock Exchange (symbol ALV).

More information about the company is available on the Internet at www.autoliv.com.

About Ticona and Celanese

Ticona, the engineering polymers business of Celanese Corporation, produces and markets a broad range of high performance products, and posted net sales of $1,298 million in fiscal 2011. Ticona employs more than 1,500 individuals at production, compounding and research facilities in the USA, Germany, Brazil and China. For more information, please visit www.ticona.com or www.ticona.cn (Chinese language).

Celanese Corporation is a global technology leader in the production of specialty materials and chemical products that are used in most major industries and consumer applications. Our products, essential to everyday living, are manufactured in North America, Europe and Asia. Known for operational excellence, sustainability and premier safety performance, Celanese delivers value to customers around the globe with best-in-class technologies. Based in Dallas, Texas, the company employs approximately 7,600 employees worldwide and had 2011 net sales of $6.8 billion, with approximately 73% generated outside of North America. For more information about Celanese Corporation and its global product offerings, visit www.celanese.com or the company’s blog at www.celaneseblog.com.

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