

150 years



News Release

World's first top mount with polyurethane bearing and polyamide housing

- **BASF combines plastic specialties Cellasto® and Ultramid® for the first time**
- **Globally available top mount is 25 percent lighter than aluminum die-cast version with rubber**

BASF is now expanding its expertise in top mounts to enable car manufacturers an optimum combination of weight savings, pleasant acoustics and vibration damping. The unique NVH (noise, vibration, harshness) solution is made possible by combining two of BASF's plastic specialties: the micro-cellular polyurethane elastomer Cellasto® and the highly glass-fiber reinforced polyamide Ultramid® A3WG10 CR. The top mount with the Cellasto® element and the Ultramid® housing is around 25 percent lighter than conventional aluminum die-cast versions with rubber. It was developed and optimized for serial production using BASF's simulation tool Ultrasim®.

Combination of polyurethane and polyamide

Like other automotive components made of Cellasto®, BASF's globally active Cellasto® business team offers the top mount as a complete solution to car manufacturers. "By joining Cellasto® with an Ultramid® housing in a top mount for the first time, we are combining our Verbund expertise in the best materials, customized design and meticulous quality management to provide our customers with rapid component development and implementation, shorter process chains and global use," says Wolfgang Micklitz, head of the global business management Cellasto®. "This new and complex component offers a

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sustainable innovation that contributes to further CO₂ savings along with high safety and maximum comfort."

Top mounts – the right material mix is decisive

The top mount links the shock absorber to the chassis and thus has a decisive influence on driving comfort and dynamics. The interplay between the materials of the individual components is therefore of crucial importance: Cellasto® shows very good static and dynamic behavior, has a long life usage and takes up only a small amount of installation space. Components made of Cellasto® have been used in cars for more than 50 years. The PA66 grade Ultramid® A3WG10 CR is reinforced with 50 percent glass fibers and is therefore exceptionally rigid and solid, even at high temperatures. The engineering plastic is particularly suitable for dynamic loads and thus generally a good alternative to metal.

Combined to form the top mount, the actual bearing, the jounce bumper and the dust tube for the shock absorber can be functionally integrated and achieve good damping and acoustics. With a manufacturing technique especially developed by BASF, housing and bearing are joined to each other permanently. The CAE tool Ultrasim® was used to calculate the load situations relevant for top mounts, the lifespan and the injection-molding process, taking into account the reaction forces of the Cellasto® core.

Plastic specialties Cellasto® and Ultramid® by BASF

Under the Cellasto® brand name, BASF develops, produces and distributes components made from micro-cellular polyurethane elastomers for parts in chassis, powertrain and interior such as spring aids, top mounts, spring isolators and transmission mounts. BASF is the global market leader in this segment: Today, Cellasto® jounce bumpers can be found in most vehicles that are manufactured around the world. Ultramid® A3WG10 CR (CR=crash-resistant) is a polyamide specialty that is used mainly in crash-relevant chassis components like front ends, in cross beams and engine mounts.

Further information:

www.cellasto.de

www.ultramid.basf.com

www.ultrasim.basf.com

About BASF's Performance Materials Division

BASF's Performance Materials division encompasses the entire materials' know-how of BASF regarding innovative, customized plastics under one roof. Globally active in four major industry sectors - transportation, construction, industrial applications and consumer goods – the division has a strong portfolio of products and services combined with a deep understanding of application-oriented system solutions. Key drivers of profitability and growth are our close collaboration with customers and a clear focus on solutions. Strong capabilities in R&D provide the basis to develop innovative products and applications. In 2014, the Performance Materials division achieved global sales of € 6.5 bn. More information online: www.performance-materials.basf.com.

About BASF

At BASF, we create chemistry – and have been doing so for 150 years. Our portfolio ranges from chemicals, plastics, performance products and crop protection products to oil and gas. As the world's leading chemical company, we combine economic success with environmental protection and social responsibility. Through science and innovation, we enable our customers in nearly every industry to meet the current and future needs of society. Our products and solutions contribute to conserving resources, ensuring nutrition and improving quality of life. We have summed up this contribution in our corporate purpose: We create chemistry for a sustainable future. BASF had sales of over €74 billion in 2014 and around 113,000 employees as of the end of the year. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (AN). Further information on BASF is available on the Internet at www.basf.com.