

150 years



News Release

Lightweight material for tough applications

- **Schwalbe's new Evo Tube uses thermoplastic polyurethane from BASF**
- **Weight savings of up to 65% compared with butyl inner tubes**
- **Inner tube, valve base and valve stem all in the same material**

How to provide the same strength yet be ultra-low weight – the new inner tube for mountain bikes from Schwalbe takes on this challenge. The company, the market leader in Europe for bicycle tires and inner tubes, has worked with BASF to develop a new thermoplastic material. It is based on the thermoplastic polyurethane (TPU) Elastollan® by BASF. The excellent mechanical properties of this material mean that the wall thickness could be considerably reduced. This gives the eye-catching blue Evo Tube an important advantage over butyl-based inner tubes: the weight has been reduced by as much as 65% compared with a standard 29-inch tube; depending on the size of the tire, the Evo Tube weighs between 68 and 76 grams. According to Schwalbe, the tube will be in stores from December 2015.

The thermoplastic polyurethane from BASF is remarkable for its many useful material characteristics. It is particularly resistant to abrasion and wear and therefore really long-lasting. Furthermore, an inner tube made from this plastic can withstand a very high level of continuous load and – despite its greatly reduced wall thickness – maintain a constant air pressure over long periods. An interesting feature of the solution that was developed with Schwalbe is that the tube, valve base and valve stem are all made from materials based on Elastollan. This

September 1, 2015
P 325/15e
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simplifies the production process and also allows the product to be easily recycled. "Thanks to our extensive portfolio of suitable types of Elastollan, we were able to find the perfect combination of materials to make the new Evo Tube," explains Sascha Mattfeld, from TPU Sales at BASF.

BASF helped Schwalbe over a period of two years with selecting the material, carrying out production trials and providing ready-made components from BASF's own Application Engineering Centre. During the work on the project, extensive mechanical stress tests were carried out, especially with regard to temperature and pressure resistance and gas permeability. "Our close partnership with BASF was focused and constructive in every way: we received intensive support and advice and were flexibly supplied with sample components throughout the whole period of the project," adds Marcus Lambertz, the Evo Tube product manager at Schwalbe. "We are already working on developing more versions based on the same material."

The thermoplastic polyurethane from BASF also has a wide range of possible applications in other industries and sectors, for example in the automotive industry or in mechanical engineering and medical engineering. The synthetic material can also be processed in various different ways: among other things, Elastollan can be injection molded, extruded or blow molded.

More information can be found at: www.elastollan.de.

About Schwalbe

The German company Ralf Bohle GmbH, with its Schwalbe brand, is the market leader for bicycle tires in Europe. More than 180 people are employed by the Bohle Group which has subsidiary companies in Italy, France, the UK, the Netherlands and the USA/Canada. The third-generation family-owned company is particularly well-known for its innovations such as the first "flat-less" bicycle tire, the Schwalbe Marathon Plus. www.schwalbe.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.