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## Unique Borealis solution achieves market first for VW “under-the-bonnet” component

Borealis' unique glass fibre reinforced polypropylene (PP) compound XMOD GB306SAF is helping Volkswagen (VW) and parts manufacturer MAHLE Filter Systems UK improve production cost-efficiency and achieve both performance and environment-friendly benefits for the Air Intake Manifolds (AIMs) used on a wide variety of VW car models. Their choice of high-performance XMOD GB306SAF from Borealis, a leading provider of chemical and innovative plastics solutions, makes VW the first automotive OEM to switch from glass reinforced Polyamides to PP for this high tech under-the-bonnet application.

“Plastic air intake manifolds are used in the majority of vehicles produced worldwide today because of the optimised air flow, design freedom and general reductions in weight and cost they offer over their metal counterparts,” comments Dennis Nicholls, project manager MAHLE UK. “However, rising under-the-hood temperatures, demands for improved function integration capability, noise reduction and ever-lighter components, plus the need to reduce our own and our customers' overall system costs, means we have had to look beyond Polyamides to meet these challenges.”

Borealis worked in close cooperation with MAHLE Filter Systems, providing material development and computer aided design and testing support, to ensure XMOD GB306SAF was the optimum solution for producing AIMs that would satisfy VW's specific requirements. These are lower system costs without significant change in tool and part design, better acoustic behaviour and use of an environment-friendly material. To eliminate MAHLE's need for equipment investment, same-speed production with existing injection moulding processes and post-moulding techniques, such as direct screwing, was a key stipulation.

XMOD GB306SAF is a high stiffness 35% glass fibre reinforced PP compound that offers long-term high heat and chemical resistance, vibration resistance combined with high fatigue and a broad operating temperature

1 (3)

between -40°C and +120°C. Existing manufacturing equipment and processes for AIMs can be used. In addition, as a lighter-weight, lower density material it enables weight reductions for AIMs of up to 15%, while offering exceptional sound damping that surpasses current acoustic behaviour for AIMs.

XMOD GB306SAF contributes to lowering overall production costs for AIM parts through its lower material price and its lightweight benefits of improved handling and reduced energy usage. Lower processing temperatures and the lack of pre-drying further reduce overall energy consumption and eliminate manufacturing steps, achieving more cost-effective production.

"Polypropylene is already the most widely used thermoplastic material in cars and under the bonnet", adds Harald Hammer, Vice President Business Unit Mobility. "As proven with the Air Intake Manifold, this XMOD material leads the way in further diversifying automotive applications for PP, delivering the step change in cost-efficiency, weight reduction and environmental performance the industry requires."

**End**

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2 (3)

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**Borealis Business Unit Mobility**

Borealis' Mobility business specialises in supplying advanced polyolefin plastics to leading manufacturers in the automotive industry. The portfolio of products includes materials for exterior, interior and under the bonnet applications, such as bumpers, body panels, trims, dashboard, door cladding, climate control units, air intake manifolds as well as battery cases. Through close collaboration with our customers, innovative technologies and our extensive product portfolio, Borealis has established a leading position on the automotive market across Europe and South America.

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**Borealis** is a leading provider of chemical and innovative plastics solutions that create value for society. With sales of EUR 4.7 billion in 2009, customers in over 120 countries, and 5,200 employees worldwide, Borealis is owned 64% by the International Petroleum Investment Company (IPIC) of Abu Dhabi and 36% by OMV, the leading energy group in the European growth belt. Borealis is headquartered in Vienna, Austria, and has production locations, innovation centres and customer service centres across Europe and the Americas. Through Borouge, a joint venture between Borealis and the Abu Dhabi National Oil Company (ADNOC), one of the world's major oil companies, the company's footprint reaches out to the Middle East, Asia Pacific, the Indian sub-continent and Africa. Established in 1998, Borouge employs approximately 1,400 people, has customers in more than 50 countries and its headquarters are in Abu Dhabi in the UAE and Singapore.

Building on the unique Borstar® technology and their experience in polyolefins for more than 50 years, Borealis and Borouge provide innovative, value creating plastics solutions for the infrastructure (pipe systems and power and communication cables), automotive and advanced packaging markets. In addition, Borealis offers a wide range of base chemicals from melamine and plant nutrients to phenol and acetone.

Today Borealis and Borouge manufacture over 4 million tonnes of polyolefins (polyethylene and polypropylene) per year. Borouge is currently tripling its polyolefins manufacturing capacity to 2 million tonnes per year (t/y) by mid-2010 and an additional 2.5 million t/y is scheduled for 2013. The companies continue to invest to ensure that their customers throughout the value chain, across the globe, can always rely on product quality, consistency and security of supply.

Borouge and Borealis are committed to the principles of Responsible Care® and proactively contribute to addressing the world's water and sanitation challenges through their Water for the World™ initiative.

For more information visit:

Borealis: [www.borealisgroup.com](http://www.borealisgroup.com)

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Water for the World: [www.waterfortheworld.net](http://www.waterfortheworld.net)