

News Release



Ultramid® Advanced N: new polyphthalamide portfolio for sophisticated components in the automotive and electronics industries

- **New partially aromatic polyamides from BASF now globally available**
- **Extraordinary combination of properties: constant mechanics up to 100°C, outstanding resistance to chemicals, low water absorption, low friction and wear**

BASF is expanding its range of partially aromatic polyamides and launching a new polyphthalamide (PPA) portfolio on the market. The portfolio with the name Ultramid® Advanced N comprises unreinforced compounds and compounds reinforced with short or long glass fibers as well as flame-retardant grades. They exceed the properties of conventional PPA plastics: constant mechanics up to 100°C (glass transition temperature: 125°C), outstanding chemical resistance and low water absorption as well as low friction and wear. Ultramid® Advanced N enables short cycle times and a wide processing window. The new product line is supplemented by detailed material characterization and the proven BASF application development capabilities. BASF offers selected grades for customer projects around the world from now on.

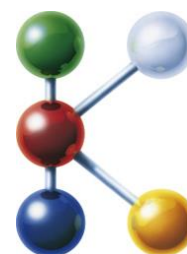
Greater scope for innovations

The new portfolio gives customers from different industries greater freedom for innovations in order to develop technically sophisticated end-consumer products. With Ultramid® Advanced N, customers are able to satisfy demands for miniaturization, functional integration and

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freedom of design. They are also able to comply with energy efficiency and safety parameters – factors that are crucial to market success. With the new BASF PPA these high standards for mechanics, chemical resistance and dimensional stability can be met across a wide temperature range. “Ultramid® Advanced N is BASF’s response to the rising demands on plastics that are employed today under increasingly challenging operating conditions”, says Dr. Melanie Maas-Brunner, Senior Vice President, Performance Materials Europe. “Developing specialties such as Ultramid® Advanced N is in-line with our strategy to provide our customers with a broad range of solutions. We are committed to offer a broad PPA portfolio and will further launch high-performance plastics in the coming years.”

Wide range of uses in many industries

Using Ultramid® Advanced N allows customers to design lighter, smaller and stronger plastic components for challenging environments where other materials reach their limits. The special properties of the new BASF PPA can be combined to create unique product profiles. The material is able to solve application problems in a wide range of different uses: Ultramid® Advanced N is suitable for small connectors and function-integrating housings in white goods, consumer electronics and mobile devices. It can be used in automotive components and structural parts near the engine and the gearbox in contact with hot, aggressive media and different fuels. Applications like gear wheels and other wear parts can be implemented, too. Ultramid® Advanced N possesses lead-free soldering properties that find application within the electronics and electrical industry, e.g. to assemble circuit boards using SMD (SMD: surface mounted device) technology. “We will actively approach our customers to understand their specific requirements and offer them solutions based on BASF’s expertise in application development and product know-how,” says Abdullah Shaikh, Head of PPA Business, Performance Materials Europe. “We are looking forward to providing more insight into our portfolio and discuss applications with our customers during the K fair in October 2016.”

Superior mechanics, outstanding flame retardance and more

Rigidity and strength of the new BASF polyphthalamide remain stable up to the high glass transition temperature of 125°C, with very low impact from external influences like changes in humidity. Compared to a corresponding PA66 grade (glass transition temperature: 60°C), Ultramid Advanced N has a broader application range and superior mechanics. The electrical properties of Ultramid® Advanced N are also largely independent of moisture content at room temperature and above – a marked difference compared to aliphatic polyamides. As a result of its high melting point of 300°C and its low water uptake, Ultramid® Advanced N is particularly suitable for lead-free soldering: The heat distortion temperature is maintained and the material does not display any blistering. The low water uptake leads to an excellent dimensional stability. In tests, the water and moisture uptake could be reduced by 50% compared to a PA6T. An Ultramid® Advanced N grade reinforced with 35% glass fibers only absorbs less than 1% of moisture until saturation.

In alternating climate tests, the flame-retardant grade reinforced with 30% glass fibers proved to be superior to corresponding market PPA grades as far as its tendency to migrate is concerned. It has very good flame-retardant properties (V-0 rating in the UL94 tests at 0.4 mm) and is equipped with a flame retardant which is free of halogen. The material also displays excellent creep resistance, a good surface finish and is laser-markable.

Ultramid® Advanced N is extraordinarily resistant against chemicals, in particular hot oil, coolants such as Glystantin®, against calcium chloride as well as fuels with a high methanol content. The individual grades are fitted with different heat stabilizers and thus tailor-made for particular requirements of the automotive, electrical and electronics industries.

BASF at K 2016

Where your ideas become ideal solutions: BASF at K fair from October 19-26, 2016 in Dusseldorf, Germany, in hall 5, booth C21/D21. You can find all related press releases, photos and further information here: www.basf.com/k2016.

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 2015, the Performance Materials division achieved global sales of € 6.7 bn. More information online: www.performance-materials.basf.com.

About BASF

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. The approximately 112,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into five segments: Chemicals, Performance Products, Functional Materials & Solutions, Agricultural Solutions and Oil & Gas. BASF generated sales of more than €70 billion in 2015. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (AN). Further information at www.basf.com.