

# News Release



## **BASF at Fakuma 2014: Innovations in PBT, polyamide, additives and polyurethanes**

- **Premiere: PBT for aroma-proof thin coffee capsules**
- **Stand seating with the surface polyamide Ultramid® SI**
- **Engineering plastics and TPU in the BMW i3 and Citroën C4 Cactus**
- **Flame-resistant engineering plastics improved further**
- **Medical technology: Ultraform® PRO in Skin Stretcher**
- **Materials re-imagined – designfabrik® presents “Concept 1865”**
- **Color Solutions and masterbatch preparations**

Experience innovations in plastics directly at the stand – BASF makes it possible at Fakuma 2014. Both the stand's chairs and the coffee capsules used at the coffee bar represent new applications of BASF plastics. Aside from these innovations from the furniture and packaging sectors, BASF will also be presenting innovations in engineering plastics, polyurethanes and masterbatch preparations for automotive, E&E and medical technology applications at the international trade fair for plastics processing in Friedrichshafen.

### **Coffee capsules and chairs – BASF plastics at the trade fair stand**

#### PBT for coffee capsules that seal in the aroma – first prototypes

BASF is one of the first plastics manufacturers to expand its PBT (polybutylene terephthalate) product line by a new special grade

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optimized for the production of air-tight coffee capsules that retain the aroma. This engineering plastic goes by the name Ultradur® B1520 FC (FC: food contact) and it combines excellent barrier properties against moisture and oxygen, while above all, containing the aromas, without a need for any additional complex coatings. This distinguishes these Ultradur capsules from other injection-molded capsules, which are usually packaged individually, as well as from multilayered thermoset capsules. Injection molding is the adequate processing technique for the production of upscale coffee capsules with their exacting design.

With its food-contact certification, this new grade is suitable not only for coffee capsules but also for thin-walled injection-molded packaging for cosmetics and food products. The first coffee capsule prototypes made of the new material by CCS GmbH, an independent Munich-based supplier ([www.cc-s.eu](http://www.cc-s.eu)), are being showcased at the Fakuma plastics trade fair in October of 2014. The new Ultradur B1520 FC is now available in commercial quantities. It can be colored using suitable masterbatches created by BASF Color Solutions.

#### Stand chairs: Surface polyamides for the furniture industry

Visitors to the BASF stand at Fakuma will sit on the “A-Chair” from the Brunner company. It is made of Ultramid® B3EG10 SI (SI: surface improved), one of the four representatives of the new surface polyamide family from BASF for the needs of the furniture industry. First introduced at the K 2013 plastics trade fair in Düsseldorf, this product family combines a high surface quality with the outstanding mechanical and chemical properties of the plastic class, in one case including special flame-resistant characteristics. BASF experts assisted the manufacturer in the design of the office chair with their simulation tool Ultrasim™.

#### **Engineering plastics and TPU in the BMW i3 and Citroën C4 Cactus**

As the first manufacturer of thermoplastic polyurethane (TPU), BASF has successfully optimized the material so that it can be applied

extensively and unpainted on the vehicle exterior. The automotive manufacturer PSA Peugeot Citroën uses the new TPU grade Elastollan<sup>®</sup> AC 55D10 HPM (High Performance Material) for cladding the Citroën C4 Cactus with so-called Airbumps<sup>®</sup>. This world first is the result of many years of development work between the French automotive manufacturer, the supplier Rehau of Switzerland and BASF. Airbumps are large air-filled cushion bumpers in contrasting colors: They are fitted on the sides as well as on the front and rear of the vehicle, protect the car exterior from impact and scratches and give the vehicle its distinctive look.

Two innovative components from the BMW i3, the electric vehicle from the BMW Group, will be on display at the BASF stand: the front seat, whose backrest is the first injection-molded and unpainted structural seat component made of polyamide that has a visible surface. The hybrid component weighs only 2 kg and embodies all the know-how of BASF's Global Seat Competence Team. The backrest is made of a particularly UV-stable polyamide 6 compound specially developed by BASF for applications of this type (Ultradur<sup>®</sup> B3ZG8 UV). There is also a large integral component made of Ultradur<sup>®</sup> B4040 G6 on display that keeps the two body shells apart. The PBT material is dimensionally stable independent of the ambient climate and provides the necessary buckling resistance. The injection-molded component comprises several smaller components planned in the past, thus reducing complexity and costs.

### **Flame-resistant technical plastics improved further**

The trend towards miniaturization and thinner walls in electrical and electronics applications continues apace and BASF will be presenting multiple product families with new and improved UL listing to coincide with Fakuma.

The flame-resistant Ultradur<sup>®</sup> types B4406 G2/ G4/ G6 (polybutylene terephthalates) are classified according to UL94 V-0 from a wall thickness of 0.4 mm. Now the listing has been expanded to include the relative temperature index (RTI) for 0.4 mm. The high RTI values

for dielectric strength remain consistently high at 140 °C. The product family therefore is especially suitable for increasingly powerful electrical plugs, power strips and housing components. These can now be produced with lower wall thicknesses.

The newly developed Ultramid® A3U42G6, too, a halogen-free, flame-retardant, glass fiber-reinforced polyamide meets fire protection class V-0 according to UL94 from a wall-thickness of 0.4 mm. The heat aging resistance was significantly improved over glass fiber-filled polyamide types such that the material, with an RTI value for dielectric strength at 140 °C with a 0.4 mm wall-thickness and even 150 °C at 0.75 mm and more, is suitable for use at higher temperatures. The new Ultramid A3U42G6 is also distinguished by extremely easy processing with reduced deposit formation. The flame retardant system shows no migration effects and thus ensures higher-quality component surfaces. Possible application areas include control, contactors and connectors.

### **Medical technology: First application of Ultraform PRO in Skin Stretcher**

Ultraform® S2320 003 PRO (polyoxymethylene), specially developed by BASF to meet the particular requirements of the medical technology sector, has made an impressive debut in the Skin Stretcher product from BioWim GmbH, primarily for its reduction of the friction between touching functional components, the combination of high rigidity with outstanding resilience as well as very good flowability. The material also provides demonstrated compliance with international standards for the use of plastics in medical technology. Skin Stretcher is an implement for treating or closing large wounds after operations or accidents.

### **Rethinking Materials – a concept-bicycle as an experiment**

Rethinking Materials – this is the thought experiment posed by BASF and the design agency DING 3000 which led to the “Concept 1865” bicycle. At Fakuma, BASF’s designfabrik® will be displaying the functional and rideable bicycle design study – a bike that takes on

the appearance of the penny-farthing bicycle that was popular at the time of BASF's founding in 1865. The electric bicycle incorporates over 20 different, in some cases very innovative, plastics, from polyurethanes to thermoplastics, foams, epoxy resins and composite products that BASF subsumes under the heading "Performance Materials." For example, the tire base material for the bicycle is composed of the world's first expanded thermoplastic polyurethane Infinergy<sup>®</sup> from BASF. It is light, durable and very elastic. The material had already proven its outstanding resilience and exceptional long-term durability in the midsole of the Energy boost running shoe from Adidas. Also advantageous in tires: the low density as well as the tear- and temperature-resistance of Infinergy.

### **Masterbatch preparations**

BASF Color Solutions is once again represented at the BASF stand this year and will be presenting a wide spectrum of masterbatch applications for coloring and stabilizing plastics, also in cooperation with other BASF units.

One focus is the coloring of engineering polymers. With processing temperatures of up to 350°C, temperature-resistance is an especially crucial factor. The masterbatches of the Sicoversal<sup>®</sup>X series, which were optimized for the Ultradur<sup>®</sup> plastics from BASF (polybutylene terephthalate), are present in the displayed fiber-optics cables and the newly developed coffee capsules at the coffee bar. Special types approved for medical applications are also available. The displayed lightweight and yet robust airplane trolley made of Ultrason<sup>®</sup> (polyarylsulfones) is an example of the use of Sicoversal<sup>®</sup>X masterbatch in the transport sector.

In the construction sector, BASF Color Solutions puts its many years of experience to use in the permanent coloring of wood-plastic composites, which are visible in the floor elements of the BASF stand. The stand's chairs are also a BASF complete solution in which the Sicopas<sup>®</sup> masterbatch colors the Ultramid<sup>®</sup> SI plastic.

**On the internet:**

[www.plasticsportal.eu](http://www.plasticsportal.eu)

[www.polyurethanes.basf.de](http://www.polyurethanes.basf.de)

[www.basf.de/masterbatch](http://www.basf.de/masterbatch)

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**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 about €74 billion in 2013 and over 112,000 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](http://www.basf.com).