

The surface polyamide

Ultramid® SI – the entire beauty of plastics



Ultramid® SI

Aesthetics and mechanics – no contradiction any longer.

Advance with seating Ultramid® SI – the surface polyamide

From the beginning, BASF has helped to shape the trend toward using plastics in the furniture industry. The MYTO chair, for example, has become a design classic, designed by the renowned designer Konstantin Grcic and developed by the Italian furniture manufacturer Plank together with BASF. This acclaimed seat was the starting point for many follow-up projects such as the Vegetal design chair from Vitra.

For even more design freedom regarding aesthetics, stability and surface quality, BASF has now developed a range of four specific grades of the engineering plastic Ultramid®: Ultramid SI (SI: surface improved). This new surface polyamide portfolio combines the technical properties typical of polyamide with a particularly high-quality surface finish - and thus meets the highest requirements in the furniture industry.

Sample component made of the surface polyamide Ultramid® SI with 50 % glass fiber content, enlarged by 500 %

Sample component made of conventional Ultramid® with 50 % glass fiber content; enlarged by 500 %

Versatile from every point of view

Stability embraces color.

Tailor-made coloring and UV resistance

All four Ultramid® SI grades are basically available in a natural version and in a brilliant black. Nearly unlimited color variations, adapted to the material, are possible with the masterbatches by BASF Color Solutions GmbH. But not only the color, also the UV resistance can be adjusted to customer requirements. BASF provides its material expertise to help designers as well as manufacturers to realize even ambitious design ideas.



Color expertise plus design: the Vegetal design chair from Vitra is available in six special colors.

Ultramid® SI grades

Ultramid® B3EG4 SI	20 % glass fibers
Ultramid® B3EG6 SI	30 % glass fibers
Ultramid® B3EG10 SI	50 % glass fibers
Ultramid® B3U40G4 SI	flame retardant

Versatile application profile

Thanks to its ideal combination of mechanics and visual appeal, Ultramid® SI can be used in different chair applications – as material for nearly all components.



The Ultramid® SI range

Appearances are not always deceptive – sophistication meets stability.

Ultramid® SI shows the performance one expects from a polyamide and displays surfaces one does not expect from a polyamide.

The Ultramid® SI portfolio opens up many possibilities for the development and production of high-quality design goods. All four Ultramid® SI grades combine their high surface quality with the excellent mechanical and chemical properties of polyamide. In addition to that, they each show a special functional orientation.

Ultramid® B3EG4 SI with 20 % glass fibers

With a glass fiber content of 20 %, Ultramid® B3EG4 SI stands out with a good combination of strength, stiffness and toughness. The material is therefore suitable for components that have to show a high level of comfort, e.g. back frames or seat shells. Like all Ultramid® SI grades, the material has a compatible UV stabilization and also reaches constant color values over prolonged periods of time – if self-colored with the masterbatches from BASF Color Solutions.

Ultramid® B3EG6 SI with 30 % glass fibers

Because of its glass fiber content of 30 %, Ultramid® B3EG6 SI is especially suited for back frames and backrests of office chairs. As the whole Ultramid® SI product range, Ultramid® B3EG6 SI is noted for its very homogeneous surface appearance. Visible weld lines and reworkings such as lacquering belong to the past. For design surfaces, it is the ideal alternative to the existing standard PA6 GF30.

Ultramid® B3EG10 SI with 50 % glass fibers

With a glass fiber content of 50 %, Ultramid® B3EG10 SI is noted for its very high mechanical strength and stiffness. Despite the high degree of fiber filling, supporting components can be manufactured with a very uniform look. Ultramid® B3EG10 SI is therefore suitable for furniture components that are subject to high levels of stress such as chair pedestals, armrests and other functional parts which have to satisfy high esthetic requirements in visible parts.

Ultramid® B3U40G4 SI with 20 % glass fibers, flame-retardant

Ultramid® B3U40G4 SI is a flame-retardant Ultramid® SI with 20 % glass fibers. In standard industry tests such as the paper cushion test (DIN 5510-2) and the crib 5 test (BS 5852), it performs significantly better than non-flame-retardant SI materials. As no halogenated flame retardants are used, the smoke gas density and toxicity are very low. Thus Ultramid® B3U40G4 SI is especially suited for public buildings and other areas where high demands are placed on fire safety. Light colors are possible as the product does not contain any red phosphorus.



Consulting in the designfabrik®

Design cannot be industrialized but industrial goods can be designed.

Aesthetics meet engineering

The new Ultramid® SI grades are especially suited for chairs, furniture and other design objects for which technically sophisticated materials with outstanding visual properties are required. As designers and the furniture industry often break new ground here, BASF intensely supports on product development and material substitution. The designers and engineers from the designfabrik® are available as strategic partners for design-orientated industries: They help with issues like the right design for plastic, suitable processing methods and tools as well as surface finishes, shape and function.

Ultrasim® – the versatile and flexible CAE tool from BASF

The modern calculation of thermoplastic components makes high demands on the developer. In the context of manufacturing process, part geometry and material only an integrated approach can lead to the ideal component. Plastics reinforced with short glass fibers in particular have anisotropic properties depending on how the fibers perform in injection molding. The calculation of component concepts with Ultrasim® starts with the appropriate BASF materials and adequate material models, ranging from the virtual prototype and ideal manufacturing process to the finished mass-produced component. With Ultrasim® components can be tailored for specific requirements.



In BASF's designfabrik® in Ludwigshafen a team of designers and engineers assists with customer projects.



Design calculation expertise of BASF with Ultrasim® for chairs, the A-chair from Brunner as an example.

Further Information on Ultramid® SI:

www.ultramid-si.basf.com

Selected Product Literature on Ultramid®:

- Ultramid® - Product Brochure
- Ultramid® - Product Range
- Ultramid®, Ultradur®, Ultraform - Resistance to Chemicals

Note

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