

PRESS INFORMATION

Fakuma Press Release

A highlight at the Fakuma: Grivory G7V for perfect surfaces

In a world where aesthetics and design are of increasing importance, we would like to put Grivory G7V in the spotlight: This brand new high-performance polyamide not only gives visible components a decorative and stylish surface but at the same time, also protects them from scratching and the effect of chemicals. What makes Grivory G7V special is that it makes it glass-fibre reinforced composites with perfect high-gloss surfaces possible.

Since its market launch in 2020, EMS-GRIVORY's glass-fibre reinforced Grivory G7V has made its impressive properties apparent. It combines high stiffness and strength, even after moisture absorption, with the chemical resistance of Grivory GV and the outstanding surface quality of a non-reinforced polyamide. In addition, the new Grivory G7V has better UV stability compared to other semi-aromatic polyamides.

Grivory G7V was specially developed for applications where first-class surface quality is essential. This material is based on an innovative aliphatic high-performance polyamide, and enables cost-efficient production of lightweight components to be achieved without the need for additional coating steps.

Superior surface quality and impressive stiffness

Glass-fibre reinforced polyamides often have unsatisfactory surface gloss for visible components due to their rough or irregular surface structure. Semi-crystalline polyamides contract on cooling, creating uneven areas and rough areas due to exposed glass fibres. Complex injection-moulded parts therefore, often require painting to conceal such critical areas. Grivory G7V, on the other hand, has a melting point of 215°C and offers all the advantages of a semi-crystalline aliphatic polyamide such as PA6 or PA66: Easy processing, high stiffness and strength as well as chemical resistance. Lower shrinkage and a reduced crystallisation rate compared to PA66 result in a shiny, smoother, more uniform and easier-to-clean surface. This allows perfect surfaces to be achieved using glass-fibre reinforced materials. In addition, a smooth surface minimises friction, noise and wear. At the same time, G7V retains its reduced moisture absorption as well as comparable stiffness and strength values in both dry and conditioned states.

Outstanding uniformity despite high glass fibre content

The new polymer glass-fibre system Grivory G7V significantly improves surface quality, even with a high glass-fibre content. Due to its time-delayed solidification behaviour, it perfectly reproduces the mould surface without lengthening cycle times. Another advantage of this aliphatic polyamide is its low shrinkage. This allows dimensionally precise components to be produced and the risk of dimpled surfaces (so-called "orange peel") is significantly reduced. Even with the basic version Grivory G7V-5H (GF 50), low-distortion parts with high-quality surfaces and an average roughness depth (Rz) of less than 1µm can be achieved. Special X-types reduce distortion even further.

Brilliance and hardness combined

A high and uniform surface gloss defines the quality and brilliance of a surface finish. In addition, high surface hardness is needed to ensure scratch resistance. Grivory G7V combines these two properties in one product. A high gloss surface is considered to have a gloss value of >70 at an angle of incidence of 60°. All new Grivory G7V grades easily meet these requirements, even with 50% glass fibre content.

The surface of the new Grivory G7V is also up to 75% harder and thus more scratch-resistant than the surface of conventional reinforced polyamides. This is achieved primarily through the properties of the new high-performance matrix.

Easy and energy-saving processing

The new Grivory G7V was developed to ensure high-gloss components and provides uncomplicated processing during injection moulding. The material can be processed without any problems thanks to its excellent flowability and wide processing window. Excellent surface quality is already achieved with melt temperatures from 270°C and mould temperatures between 100°C and 120°C. The low melt and mould temperatures also provide energy and cost-savings for injection moulders.

Multifunction application range

Thanks to the impressive property profile of Grivory G7V, it is suitable for use in a wide range of possible applications. It can be used, for example, for structural components in the automotive interiors such as fan lamellas, indicator and gearstick levers and handles. Grivory G7V is also excellently suited for use in mechanical engineering, for radio components and in the sport and industry sectors including fixing elements and brackets. It is also used in the food and medical industries, where a flawless surface is essential for minimizing the risk of contamination and, in a worst case, cross-contamination.

Summary

Grivory G7V sets new standards in terms of surface quality and ease of processing. Due to its consistently high quality, components can be economically produced in almost any colour without the need for any additional coating processes. At the same time, Grivory G7V helps to improve the environmental balance of final products as additional coating or painting steps can be omitted. Grivory G7V extends the existing Grivory GV range and, with its various special-modification grades and colour options, it makes first-class metal replacement for visible components possible.



EMS Grivory G7V brings a new shine to every application.



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