

PRESS INFORMATION

Fakuma Press Release

High gloss metal replacement: Grivory G7V for a perfect surface finish

Appearance and design play an increasingly important role when it comes to sales: Grivory G7V, for example, brings a fresh shine to metal replacement. The newly developed high-performance polyamide gives visible components a decorative and stylish finish that is also resistant to scratching and chemicals. What sets it apart is that Grivory G7V makes high-gloss surfaces possible for glass fibre-reinforced compounds.

Available since 2020, the glass fibre-reinforced Grivory G7V from EMS-GRIVORY combines properties such as increased stiffness and strength, even after moisture absorption, with the chemical resistance of a Grivory GV and the high-quality finish of a low or non-reinforced polyamide. In addition, the new Grivory G7V products exhibit better UV stability than other semi-aromatic polyamides. Grivory G7V was developed for metal replacement applications requiring an exceptional surface finish. The material is a new aliphatic high-performance polyamide with well-balanced properties, which enable cost-efficient production of lightweight components without any additional painting.

Improved surface finish and increased stiffness

The surface sheen of glass fibre-reinforced polyamides often misses the mark when it comes to visible parts because the surface is too rough or too uneven. Partially crystalline polyamides contract during cooling, leaving sink marks on the surface and rough areas due to exposed glass fibres. Complex injection moulded parts therefore often have to be painted in a separate production step to cover critical areas.

Grivory G7V 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 resistance to chemicals. Lower shrinkage and a reduced crystallisation rate compared to PA66, make for a shinier, smoother, more uniform, and easier-to-clean surface. This makes it possible to produce a perfect surface finish using glass-fibre-reinforced material. In addition, the smooth surface also minimises friction noise and wear. G7V also benefits from being a "genuine Grivory GV" with reduced moisture absorption and comparable stiffness and strength in a dry and conditioned state.

First-class uniformity despite a high glass-fibre content

The new polymer glass-fibre system Grivory G7V significantly improves the finish of the surface while maintaining a high glass fibre content. Due to its delayed freezing behaviour, it reproduces the mould surface perfectly without extending the length of the cycle. Another advantage of the aliphatic polyamide is its minimal shrinkage. This allows for the precise production of components, whilst the risk of ending up with a wavy surface (known as "orange peel") is significantly reduced. Even the basic grade, Grivory G7V-5H (GF 50), low-distortion parts with a high-quality surface and an average roughness depth (Rz) of less than 1µm can be produced. Special X-types reduce distortion even further.

Gloss and rigidity combined

A high-gloss and uniform surface sheen defines the value and brilliance of a surface. Another required property is increased hardness of the surface to ensure the surface is scratch resistant. Grivory G7V combines these properties in one product.

If a surface achieves a gloss value of >70 at an angle of incidence of 60°, it is considered a high-gloss surface. All new versions of Grivory G7V easily meet these requirements with a 50% glass fibre content.

Easy and energy-saving processing

The new Grivory G7V was developed for high-gloss component design and straightforward processing by injection moulding methods. The material is easy to process thanks to its notable flowability and wide processing window. An excellent surface finish is achieved at melt temperatures of 270 °C and above in combination with normal mould temperatures between 100 °C and 120 °C. Due to the low melt and mould temperatures, injection moulders can save energy and reduce costs.

Versatile range of applications

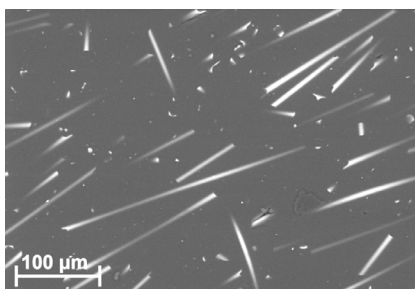
Thanks to its excellent properties, Grivory G7V can be used in a wide variety of applications. The material is particularly well-suited for structural components in automotive interiors, such as air vents, indicator and gearstick levers, and handles, for example. Grivory G7V is just as suitable for functional components in mechanical engineering as it is for fixing elements and brackets in the sports and industrial sectors as well as furniture fittings. Potential end products can also be found in the food and medical industries. Here, a crack and pore-free surface is particularly important to minimise the risk of pollution and, at worst, cross-contamination.

Conclusion

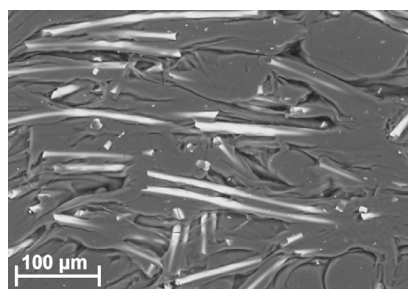
Grivory G7V is setting new standards in terms of surface quality and ease of processing. Due to its uniformly high quality, components can be produced economically in almost any colour without additional coating required. At the same time, Grivory G7V improves the eco-balance of the finished component as additional painting steps can be omitted. Grivory G7V serves as an addition to the existing Grivory GV range. With its property profile, various specifically modified grades and colour options, the material allows metal replacement in high-quality visible components.



EMS Grivory G7V brings a lovely shine to any application.



Grivory G7V GF50



PA66 GF50

The SEM image of glass fibre-reinforced PA66 GF50 (right) shows micro-cracking caused by cooling and partially exposed fibres. Grivory G7V GF50 (left) produces a homogeneously smooth surface thanks to the properties of the new Grivory G7 matrix.



Grivory G7V grades are designed to make technical components more economical. From pearl white through neon colours to glossy black: Grivory G7V grades offer a high degree of creative freedom.



Contact for technical inquiries

Nikolai Lamberts
Product Management, EMS-GRIVORY
Tel. +41 81 632 74 34
Email: nikolai.lamberts@emsgrivory.com



Contact for the press

Janne Egli
Communication
Tel.: +41 81 632 72 62
Email: janne.egli@emsservices.com