

PRESS INFORMATION

Press release Swiss Plastics

EMS-GRIVORY at the Swiss Plastics Exhibition Luzern Pioneer in replacement of metal and glass

With the high-performance polyamides Grivory, Grilamid and Grilon, EMS-GRIVORY is pioneer for replacement of metal and glass. EMS offers customers in the automotive, industry/consumer goods, electro/electronics and packaging segments, a comprehensive range of high-performance and top-quality products.

EMS already entered era of metal replacement successfully in 1991 with Grivory GV. Over the last years, products have been developed further with the objective of making higher working temperatures possible and achieving strength values nearer to those of metals. New, special polyamides reinforced with fibres open up additional and unimagined possibilities for metal replacement and have been received with great interest in the market. One good example is the range of long-glass fibre reinforced products Grivory GVL and Grilon TSGL manufactured by EMS using a pultrusion process also developed by the company. In addition, the assortment has also been supplemented by high-performance materials based on Grivory G and Grilamid L reinforced with long carbon fibres. Compared to conventional carbon-fibre reinforced polyamides, these new material grades have nearly 60% higher stiffness values.

Through the use of long glass fibres these products are even better suited for metal replacement. They provide real alternatives to die cast metal from both an economical and performance point of view and are leading plastic materials with their astonishingly high strength values. The long glass fibres - up to 10 mm in length - in the polyamide form a fibre skeleton inside the part and create a highly stressable and heat-stable structural component. Due to this felt-like fibre structure in the core of the component, the property values for impact strength, energy absorption and heat distortion temperature all increase. Strength values remain at a significantly higher level even under increasing temperatures. The formula-

tion for EMS' success with metal replacement is not only based on suitable materials, however.

As innovation has already been focus point at EMS for 75 years, along with a wide range of polyamides, the company also offers technical application services such component calculations and simulations. The optimal product assortment in combination with high-performance application technology provides customers with a performance package ranging from the initial idea right up to serial production.

Transparent high-performance polyamides

Grilamid TR 55 has a very balanced property profile and is therefore considered to be an all-rounder for transparent applications. Due to its very high flexural bending strength, Grilamid TR 90 is extremely well suited for strong dynamically stressed applications such as filter bowls, housings or spectacle frames. It has excellent resistance to weathering which is only superseded by that of Grilamid TR 90 UV.

As with all Grilamid TR grades, Grilamid TR 30 also has very good resistance to stress cracking when in contact with different media. Due to its very high resistance against non-polar media like n-hexane, fuel, oils and fats, which cannot be provided by other transparent polymers, such as PMMA or PC for example, Grilamid TR 90 is especially suitable for applications involving contact with automotive and industrial liquids. Filter bowls, flow meters or viewing windows are good examples of this kind of application. Other applications are stable housings, structural components or displays, (where high requirements apply with regard to surface gloss, resistance to scratching and transparency) in the fields of industrial plants, construction and agricultural machinery. Another very interesting point about Grivory TR 30 is that it is also compatible with Grilon TS or Grivory GV. This allows of low cost multi-component design solutions for injection moulding designs (integration of function) or for different post-treatment processes such as soldering of different components to be realised.

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Long reinforcing fibres provides stability and low warpage. To the right, the fibre skeleton of the component



Gear lever for the KOSTAL steering column module. Material: Grivory GVX-65H



Glass-clear view of the water filter. Material: Grilamid TR.

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