

PRESS INFORMATION

Press information - 75 years EMS

Innovation is tradition at EMS

The fundament of the current EMS-CHEMIE AG was laid 75 years ago with the foundation of the 'Holzverzuckerungs AG (HOVAG)'. Since then the company has had to reinvent itself four times. Today, EMS-GRIVORY is the leading specialist for metal and glass replacement.

In 1936, Dr. Werner Oswald founded the HOLZVERZUCKERUNGS AG (HOVAG) to manufacture ethyl alcohol from timber as substitute fuel («Emser Water») for motor vehicles and aviation. The production of «Emser Water» was started at Domat/Ems in 1942. In 1956, the Swiss population voted against continued subsidised purchase of «Emser Water» as fuel additive by the federal authorities, and it became necessary to discontinue production. The company reoriented its activities to the production and marketing of synthetic textile fibres Grilon (polyamide 6 / nylon), which it had been manufacturing since 1951 from the raw material caprolactam, also produced by the company.

After increased transfer of the textile industry to Asia in the 1980s, EMS stopped production of textile fibres. As speciality technical fibres, e.g. in the manufacture of felts for paper manufacturing machines, Grilon products still remain in the EMS product assortment today. With the production of caprolactam, manufacture of fertiliser was also started. The production of caprolactam was continued until 1974 and sale of fertiliser until 1988. By 1980 many further products had also been developed; Grilene polyester fibres (1964), Grilonit epoxy resins for the construction and paint industry, or Grilamid - polyamide 12, to name only a few.

A new era: Polymer construction materials

With the change of company name from EMSER WERKE AG to EMS-CHEMIE AG in 1981, focus was concentrated on the development and marketing of polymer materials. In 1991, with the polymer material Grivory GV, EMS launched

a new generation of very stiff and strong polyamides and heralded in the era of metal replacement. In 1995, GV was followed by the high-temperature polyamide family Grivory HT for use at high working temperatures. EMS started operation of the first and still today, the only production plant for high-temperature polyamides in Europe. In 2008, EMS started production of long-fibre reinforced polyamides (LFT) and since then, has offered Grivory and Grilon grades reinforced with long fibres. For penetration of new markets and to satisfy demand for bio-polymers, the product family Grivory HT3 was developed for high-temperature polyamide applications.

Replacement of metal with high-performance polyamides from EMS

In this way in 1991, EMS started successfully with Grivory GV in the era of metal replacement. In the last years, targeted development of products with performance capabilities for use at significantly higher working temperatures and with properties similar to those of metal, has been carried out. New, fibre-reinforced speciality products open up additional and unimagined opportunities for metal replacement and are received with great interest in the market. Examples of this are the long glass-fibre reinforced products Grivory GVL and Grilon TSGL, manufactured by EMS using their own pultrusion process. The product assortment has also been supplemented with long carbon-fibre reinforced high-performance materials based on Grivory G and Grilamid L. The advantages of reinforcement with long fibres are illustrated extremely well by these new material grades. Compared to conventional carbon-fibre reinforced polyamides, stiffness values of these new grades are nearly 60% higher, providing an exceptional property profile.

Through use of long glass fibre reinforcement, these products are even better suited for metal replacement. They provide a real alternative to die-cast metals both from an economic and performance point of view and are located at the top of the list of thermoplastic materials with their amazingly high strength values. With the up to 10 mm long glass fibres in the polyamide, a fibre skeleton is created inside the component which allows production of highly stressable and heat resistant structural components. Based on this felt-like fibre structure in the core of the component, values for notched impact strength, energy uptake and heat distortion temperature are greatly increased. Strength values remain at a clearly higher level, even when the component is exposed to increasing temperatures.

EMS' formula for success with metal replacement, however, is based on more than just the suitable materials. As innovation has already been a focus point at EMS for 75 years now, along with our wide range of polyamide materials we also offer technical application services such as design calculation and simulation. An optimal product range in combination with high-performance application technology provides customers with a complete service package from the first idea right up to serial production.

Pictures / Copyright: EMS-CHEMIE AG

Reprint free of charge when source is named



Polyamide materials are increasingly used to replace conventional die-cast metals.



Metal replacement today: Long-fibre reinforced polyamides provide very high strength values and low warpage. To the right, the fibre skeleton of an ashed component.



