

Domat/Ems, October 17, 2023

## PRESS INFORMATION

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### *Fakuma Press Release*

EMS speciality polyamides for electro-mobility

### **Innovative high-performance polyamides for E-mobility**

EMS-GRIVORY, the leading company and pioneer in the development of polyamides, is presenting a wide range of varied high-performance polymers, especially developed to meet the requirements of electromobility, at the Fakuma in Friedrichshafen (Stand B2-2113) from October 17 – 21, 2023.

#### **Focus on flame protection**

EMS-GRIVORY offers a wide range of flame-retardant polyamides with no halogen or red phosphorus content, which are ideal for the development and manufacture of components in the high-voltage range of electric drive systems. Our product assortment includes both reinforced and unreinforced PA6, PA66 and PA66+6 products, as well as lead-free solderable polyphthalamides (PPA). One example from our portfolio is Grilon XE 16079, a polyamide with a glass fibre content of 30 percent, which was specially developed for components with long flow paths such as battery carriers. EMS also offers flame-retardant and long-fibre-reinforced products (LFT) for the production of safe and durable charging connectors (Fig. 1).

#### **Key function hydrolysis stability**

EMS-GRIVORY offers Grivory HT1VA grades, specifically developed for use in the cooling systems of electric vehicles. These products are characterised by their excellent resistance to hydrolysis and heat. In direct comparison to conventional PA 66 materials, Grivory HT1VA shows more than three times higher breaking stress after storage for around 8,000 hours in a 1:1 water-glycol mixture at 110°C (Fig. 2). In addition, electro-compatible stabilisation makes seamless integration of electrical components possible.

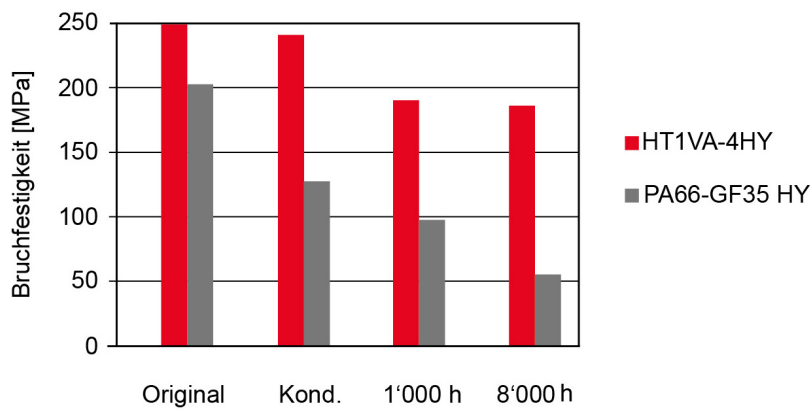
#### **Core component electrical insulation**

With reliable dielectric strength at high temperatures and in humid environments as well as an impressive tracking resistance of 825V, Grilamid TR XE 10991 opens up new perspectives for the insulation of electrical conduits. In contrast to PA 12, the dielectric strength of Grilamid TR XE 10991 remains constant even at elevated temperatures, which further increases its application versatility (Fig. 4).

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**Fig 1:** Charging plug made of Grivory GVL-4H V0.



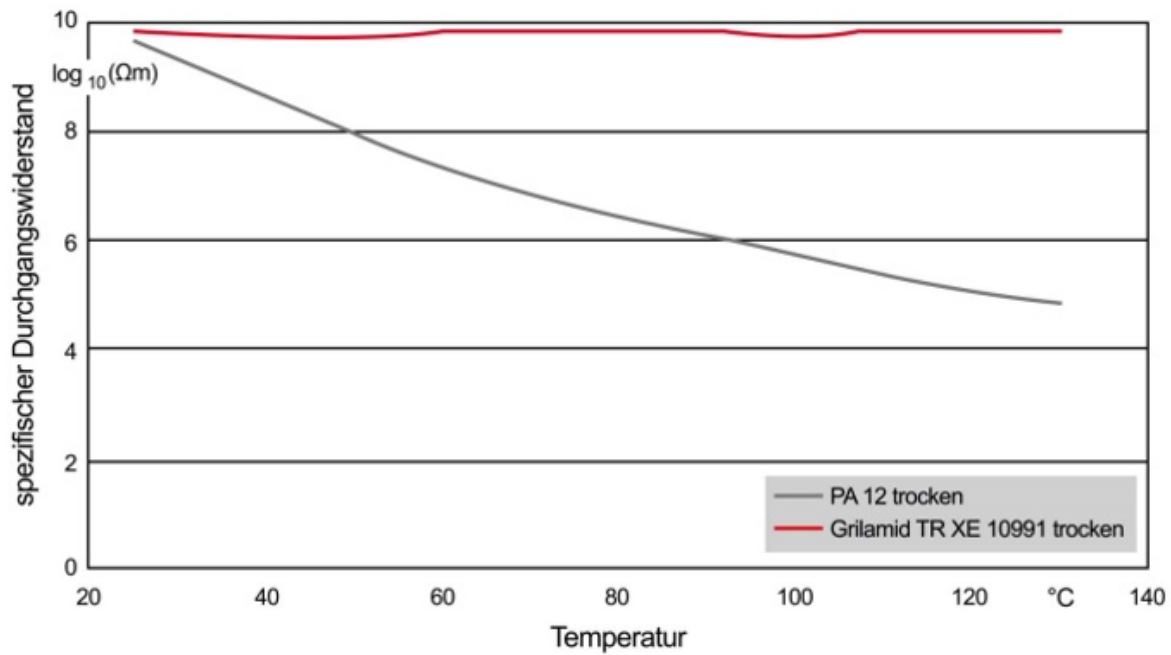
Lagerung Wasser-Glykol 1:1 bei 110°C

Breaking strength (MPa)  
Storage in water-glycol mixture      Original    Cond.

**Fig. 2:** Grivory HT1VA-4 HY has a 3.4-times higher breaking strength (186 Mpa) after storage for 8000 hours in a 1:1 water-glycol mixture at 110°C, as PA66-GF-30HY (55 Mpa).



**Fig 3:** Electrical water pump with housing made of different Grivory HT1 grades. This is used in the temperature management of electrical and hybrid vehicles for energy-saving transport of various heating and cooling agents in their respective circulation systems.



**Fig 4:** In contrast to PA12, the volume resistivity of Grilamid TR XE 10991 remains constant even at high temperatures.

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