



**High Performance Polyamides –
Our Specialty**

EMS
EMS-GRIVORY

Our products

EMS-GRIVORY – The leading specialist for high-performance polymers

Polyamides are among the most versatile and well-performing of plastic materials. EMS-GRIVORY is the manufacturer with the broadest range of polyamides worldwide. These high-performance resins for use in injection-molding and extrusion processes are sold worldwide under the trade names Grivory®, Grilamid® and Grilon®. Polyamides from EMS-GRIVORY are used in applications in the market segments automotive, industrial and consumer goods, electro and electronics, telecommunication, optics, medical technology and packagings.

We always provide a solution

The strengths of EMS-GRIVORY lie not only in the development and manufacture of these high-performance polymers, but also in the creation of innovative system solutions with customers anywhere in the

world. Cost and weight savings through metal replacement are the focus topic but EMS-GRIVORY also offers unique solutions for high-quality surfaces, designs and colors.

In this way, EMS-GRIVORY provides intensive customer support throughout the whole development process and even during running serial production. The service performance is tailor-made to suit the individual customer requirements in each market segment. Starting with the first feasibility studies and economic analyses, experienced development engineers accompany customers through prototype manufacturing and specific component testing as well as in mold optimization and process technology. Where necessary, products are adapted to meet special requirements. This means that customers are provided with a complete solution and can differentiate themselves in their markets with cost savings, weight reduction or new designs.

Development partner for innovative solutions

Weight and cost-savings through metal replacement in automotive construction

In the automotive industry, EMS-GRIVORY has contributed significantly for more than 40 years to the development of modern vehicle components of the highest quality. Our products always fulfill the increasing demanding requirements. They enable customers to achieve reductions in component weight and economic fuel consumption while satisfying high standards of comfort and safety. Further factors are their economic processing and recyclability.



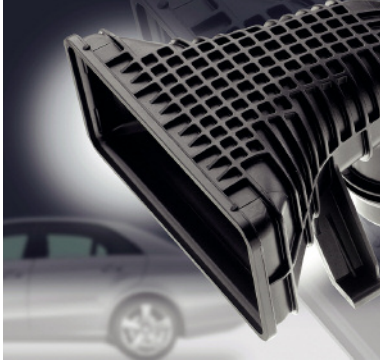
Our materials are in particularly highly demanded for the replacement of metal components in under-the-bonnet applications. For this purpose we have developed high-performance polyamides with especially high heat resistance for use in applications such as air ducts and coolers for turbo-charged engines, heat exchangers and throttle bodies. Polymers from EMS-GRIVORY are also found in automotive electrical and electronic systems which must ensure trouble-free operation under extreme climatic conditions. In addition, our polyamides are used in chassis and power train

Grilamid®
EMS

GRIVORY®
EMS

GRILON®
EMS





components where resistance to motor oils and hydraulic fluids is required. Examples of these applications are clutch, brake or steering systems. In automotive interiors, polyamides from EMS-GRIVORY replace conventional die-cast alloys as materials for functional parts such as arm rests, covers or dashboard brackets. External metal-replacement applications include door handles, wing mirrors or windscreen wiper units. Furthermore, our polyamide materials, which are resistant to chemicals, corrosion and weathering, allow efficient manufacturing of media supply systems such as fuel or cooling water lines.

Highest levels of precision and reliability in electrical and electronic applications

As stiff and yet impact-resistant housings for thin-walled components in mobile telephones, notebooks, E-book readers and tablets, polyamides from EMS-GRIVORY protect the internal electronic components while satisfying the highest requirements of strength and design. Typical applications are structural frames, houses and display windows.

In miniaturized electronic components such as LEDs or connectors, our materials ensure highest precision in combination with heat resistance at temperatures required for soldering processes.

Increasing miniaturization and more stringent safety requirements also place high demands on mechanical and thermal requirements. Our high-temperature resistant materials, with

outstanding strength values and flame retardant modification, help provide new and innovative solutions.

Metal and glass replacement in high-quality applications for industrial and consumer goods

In the sanitary market, polyamides from EMS-GRIVORY are used for water meters, water filter housings, filter bowls and pressure reduction valves. In this way, significant cost advantages can be achieved compared to the use of brass.



In coffee machine applications, special products are used which have all necessary approvals for use in direct contact with hot water.

In the construction and furniture industries as well as mechanical engineering, our products are used in a wide variety of applications demanding high requirements with regard to long life cycles and safety.

Global market leader in eyewear

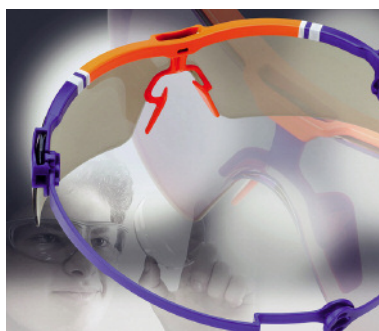
Polyamides from EMS enable the perfect combination of functionality and unlimited individual possibilities

in design, color and UV protection for sun and sports glasses. Our polyamides are also used to make ultra-lightweight and practically unbreakable frames for corrective glasses. For safety glasses, our products provide highest levels of safety through impact strength and break resistance.

Thanks to outstanding resistance to chemicals and stress-cracking, as well as excellent optical and mechanical properties, EMS-GRIVORY is world market leader for transparent polyamides with Grilamid TR 90.

Optimally packaged with polyamides from EMS-GRIVORY

Packagings and containers made of our polyamides have excellent barrier properties against oxygen, carbon dioxide and flavors so that food and beverages as well as cosmetics and medicines remain fresh for longer. Our products fulfill the strict safety regulations demanded by governmental health authorities and have all corresponding approvals.



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About us

EMS-GRIVORY is part of the High Performance Polymer business area of the EMS Group and employs around 1000 people worldwide. The largest development center and production site is located at Domat/Ems, Switzerland with further production sites in Germany, China, Taiwan and the USA. We also have development and sales organizations in all major markets in Europe, Asia and America and can quickly reach our customers on site.

We are active worldwide, prompt and customer-oriented

Specific market requirements are satisfied by the independent but closely cooperating business units EMS-GRIVORY Europe, EMS-GRIVORY Asia und EMS-GRIVORY America. Customers worldwide benefit from the locally competent and close global cooperation of these business units in application development, marketing and sales, research and development and manufacturing.

HIGH PERFORMANCE POLYMERS
SPECIALTY CHEMICALS