

Division

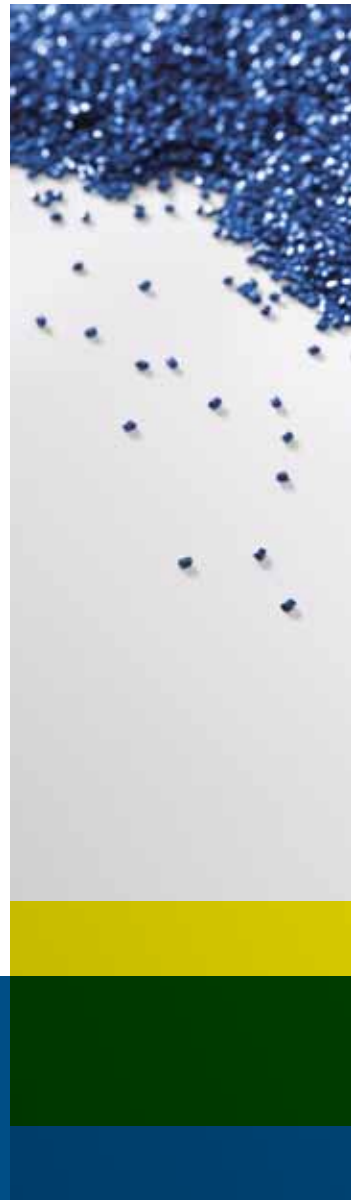
Ensinger Compounds
A division of
HP-Polymer GmbH
Werkstraße 3
4860 Lenzing
Austria
Tel. +43 7672 701 2372
Fax +43 7672 968 64

Administrative headquarters

Ensinger GmbH
Rudolf-Diesel-Straße 8
71154 Nufringen
Germany
Tel. +49 7032 819 0
Fax +49 7032 819 100

Your benefits at a glance

- *Reduced material density due to hollow glass microspheres*
- *Up to 40 % lower component weight*
- *Increased material rigidity and strength*
- *Substantial cost reduction possible*
- *Isotropic component behaviour, low warping tendency*
- *High dimensional stability when exposed to temperature change*



Plastic granules from Ensinger Compounds are the culmination of decades of experience in the production of high-performance plastics. Whether you are interested in bulk or customized products, we cover the needs of all important sectors of industry. With tried and trusted standard products and individually inspired solutions.



Compounds

*TECACOMP[®] LW
Light weight plus stability through
hollow glass microspheres*



3M

Score points with lower weight

Weight savings

In whole range of sectors, lightweight construction is the buzzword of the moment. For good reason. Whether to improve functional characteristics, to reduce material input or to benefit the environment by saving energy. While plastics have always enjoyed an advantage over metals due to their lower weight, even here there is an increasing demand for ever greater weight savings.

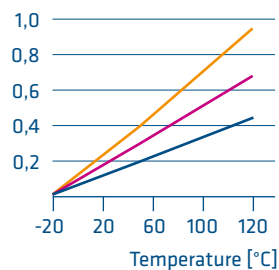
Plastics with a built-in weight benefit

By offering plastic parts with substantial weight reductions, you can open up all kinds of saving potential for your customers – a truly weighty argument in your favour.

TECACOMP® LW compounds from Ensinger make your products into lightweight elements with a whole range of added benefits.

- Weight savings of up to 40 %
- Increased material rigidity
- Low tendency to warp

Dimensional changes [%]



- PEEK
- PEEK + 10 wt% hollow glass beads
- PEEK + 30 wt% hollow glass beads

Lightweight construction backed by sound expertise

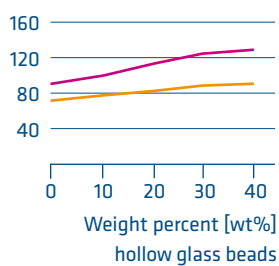
Troublefree TECACOMP® LW

The only way to make plastic components lighter used to be to reduce their wall thickness. But if reducing thickness means compromising strength and resistance, this is very limited as a course of action. Ensinger goes a whole step further: TECACOMP® LW offers reduced density.

Reliable material properties

Users can continue to rely on the plastic properties just as they always could. Depending on the polymer used, this process can actually exert a positive impact. TECACOMP® LW is less liable to warp, has a tangibly lower coefficient of expansion, and varying temperature cycles bring about only minimal dimensional change.

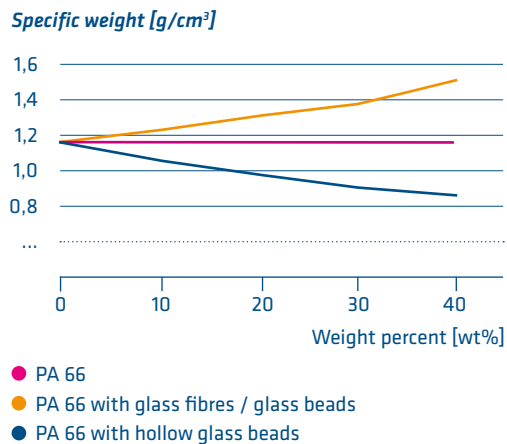
Stress [MPa]



- flexural strength
- tensile strength

Planned cavities

A reduction in density is achieved by means of microscopic cavities in the plastic matrix. Every cavity makes the material lighter by the equivalent volume.



Plastics with hollow glass microspheres

3M glass bubbles as a filler

The cavities in the plastic are created by using hollow glass spheres, also known as bubbles. These glass bubbles are just a few microns in diameter and feature a stable, extremely thin glass wall. They create a permanent bond with the polymer matrix, resulting in a lighter weight plastic. Using 40 % by weight glass bubbles, it is possible to achieve a density of for instance approx. 0.8 g/cbm on the basis of PA66 and 1 g/cbm on the basis of PEEK. The glass bubbles are heat resistant up to 600 °C and are consequently suitable for use in all high-temperature plastics.

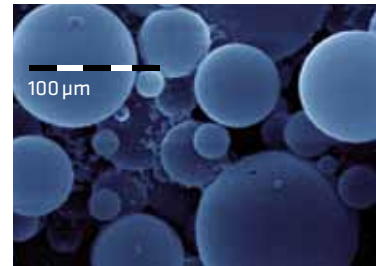
Properties and application possibilities

The combination of thermal resistance, low weight and positive mechanical properties

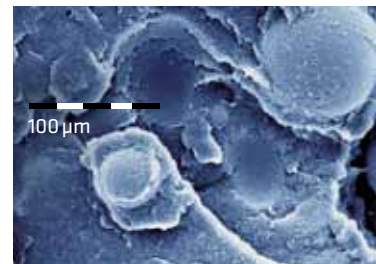
achieved by the new material opens up scope for applications in the fields of aviation, transport and the automotive industry.

Thanks to the stiffening function of the glass bubbles, the reduced thermal expansion and the thermal stability of the base polymers, the compounds are highly suitable for parts exposed to thermal and mechanical stress. Due to their low warping tendency, they are also ideally suited for products used in the field of medical technology which are exposed to extreme temperature changes – for instance sterilization containers.

The reduced processing shrinkage, isotropic properties and volume-related cost benefits are all additional positive effects achieved when processing this material.



Glass bubbles reduce the material density



Excellent bubble to polymer bond

Material selection made easy

Wide selection of base polymers

Because glass bubbles can be used as fillers in all customary standard engineering and high-performance plastics, wide-ranging different material requirements can be met using lightweight construction materials.

Standards

The number of available standard products is continuously on the rise. Please get in touch with us for more details.

Customized products

Different filling depths of up to 40 % by weight can be implemented to adapt to your specific requirements. For customized products, the filler depth is aligned precisely to the weight saving you wish to achieve and the application / stress exposure of the material.

Colours

Compounds can be dyed practically any optional colour.