

APSOplast® – innovative solutions with plastics

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Today there are hardly any application areas where plastics aren't employed. Due to their excellent properties, modern technology without these materials is hard to imagine. Angst+Pfister recently expanded its already extensive product range with additional engineering and high-performance thermoplastics. Under the newly introduced APSOplast® brand name, Angst+Pfister offers a plastics product line for virtually every requirement or application.

APSOplast® stands for **A**ngst+**P**fister **S**olutions for **p**lastics. Interpreted freely, this means that when you're looking for a suitable plastic material, you can be certain to find the solution for your application problem at Angst+Pfister.

On the basis of their physical properties and application potentials, polymer materials are divided into three main groups: thermoplastics, duroplastics and elastomers. Thermoplastics consist of molecules bonded together by physical forces. Since these bonds loosen when heat is applied, these plastics can be melted and therefore formed and welded at will. Duroplastics (duromers) are hard and brittle, whereas elastomers will deform like rubber under force and regain their original shape afterwards. The molecules are cross-linked together network-like in both duroplastics and elastomers. In elastomers, they form wide-meshed networks; in duroplastics, they form close-meshed networks. The mesh density influences the properties of polymers, such as dimensional stability under heat, hardness, or swellability.

Depending on their operational temperature ranges and market prices, thermoplastics are further divided into:

- standard thermoplastics for applications at temperatures up to around +100 °C;
- engineering thermoplastics for applications at temperatures up to around +150 °C;
- high-performance or high-temperature thermoplastics for applications at temperatures up to around +300 °C.



Many processing methods

Polymeric materials lend themselves to many different processing methods such as casting, injection molding, extruding, pressing and calendaring. These processes result in semifinished products or injection-molded parts, for example.

In most cases, injection-molded parts are finished shaped parts that need no further processing. Semifinished products are pre-formed products such as foils, plates, round bars, tubes and profiles. They are fabricated into finished parts via appropriate processing methods such as mechanical machining. Machined finished parts are preferentially used for small production runs or prototypes. For larger production volumes, changing over to injection molding should be considered for economic reasons.

In the areas of mechanical engineering, tribology, electrical engineering, medical technology, as well as in the pharmaceutical and food industries, a wide variety of plastics applications can be found. Angst+Pfister offers a comprehensive range of semifinished products made of thermo- and duroplastics – laminated materials, for example. These are available from stock.

Interesting product range extension

Here are some examples of new plastics that can be used in transport and conveyance technology, for applications in potentially explosive surroundings according to the 94/9/EC (ATEX 95) directive (EU product and operation directive), and for components highly resistant to heat and mechanical wear:

APSOplast® PA66-CF20
PA + 20% carbon fibers

or

APSOplast® PPS GF40
PPS + 40% glass fibers

For medical technology applications, Angst+Pfister has added biocompatible LSG and MT series materials to its APSOplast® product line. These materials have been tested and certified in accordance with various medical technology regulations such as USP, FDA and ISO 10993.



In addition to the broad range of semifinished products in stock, Angst+Pfister also offers customized finished parts. These are manufactured from drawings, sketches or samples on CNC or conventional machine tools using methods such as milling, turning, drilling, water jet cutting or stamping.

The following services round out Angst+Pfister's offering:

- cutting-to-size service: cutting to desired measurements (length x width) and thickness modification;
- profile service: manufacturing of guides, coverings and strips from drawings or written instructions.

Please refer to our specialist catalogs for further information. Our experts will be glad to answer any questions you may have.

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