

**FEP hoses – in the service of medicine** In areas such as cancer diagnostics, where the utmost exactitude is vital, precision components are required. The tissue filtration systems manufactured by Leica Biosystems use FEP hoses that are meticulously planned down to every single detail. High consistency both in material composition and in production quality is also an essential factor for Angst+Pfister. This attention to detailed precision is also carried over into logistics.



High dependability, expertise and experience in fluid handling technology: that's exactly what Leica Biosystems was looking for – and found.

Nearly everyone knows the anticipation: a tissue sample is sent to the lab for analysis. What will the results be? Will any malignant cells come to light? Leica Biosystems, part of the Danaher Corporation technology group,

shortens the waiting time – with systems and products that bring increased efficiency to workflows in the laboratory. An accurate diagnosis in turn leads to results that leave

no room for doubt. This is of great benefit to pathologists and histologists as well as to researchers, and of course ultimately to patients.

**How is this precision achieved?** By means of components that are equally precise. Folder after folder is lined up at the headquarters of Angst+Pfister in Zurich: every design detail, every enhancement, each and every draft – all documented and filed systematically. This is where the feed hoses supplied by Angst+Pfister to the headquarters of Leica Biosystems in Nussloch near Heidelberg literally take shape. Twenty different hoses made of fluorinated ethylene propylene (FEP) are produced for the Leica ASP300 S tissue filtration system – each of them shaped differently, and each with its own unique drawing, specifications and article number.

**Chemically resistant and anti-adhesive** The hoses supply the tissue processor with chemicals from storage containers and must therefore be chemically resistant in every aspect. They are also anti-adhesive: nothing adheres, nothing clings. The liquid being transferred drains off without residue, making the hoses ideal for ultra-pure processes, as well as for the food industry.

**Reproducible quality** A specific requirement from Leica Biosystems is that quality must remain the same at all times – a request that may sound trivial, but is in fact anything but. The compound granules used to manufacture the hoses can consist of various raw materials whose physical properties are not always identical which is why Angst+Pfister has precisely defined the corresponding material together with the compound producers. A quality assurance agreement with Leica Biosystems is in place to guarantee consistent quality and reliable procedures.

**“The consistent quality of the hoses is essential for us. At the same time, however, a good pricing structure is also highly important.”**

Thomas Heuss, Global Sourcing  
Commodity Manager, Leica Biosystems,  
Nussloch, Germany

Previously, Angst+Pfister ran through a complex qualification process, sampling all hose types in order to be in a position to convince the customer of process safety at the Nussloch production site. “We were looking for a competent partner with extensive experience in fluid handling technology,” comments Thomas Heuss, Leica Biosystems’ global sourcing commodity manager. “We want partners,” he adds, “who not only promise, but also deliver.” For Thomas Heuss this also means that, with effective organization in hose production, Angst+Pfister is in a position to offer a market-oriented pricing structure.

**This label does more** Series production has been under way for some time. The almost transparent FEP hoses are formed into the required shape under the influence of heat. This requires the utmost precision considering

that the hoses tend to return easily to their original shape when cooled. The labels at the ends of the hoses not only identify their specific form, but also serve as a control mark to ensure that they are always inserted into the connectors at equal depth and no undesired leakage occurs. The laminated adhesive labels have their

own material specification sheet because a special adhesive must be used. Angst+Pfister has also fulfilled the customer’s wish for a chamfer – and the corresponding design has been neatly documented and filed. Thanks to the chamfer, the hoses can be inserted even more effectively into the hose fittings.



The labels affixed to the hose ends serve as a control mark for insertion depth.

**Painstakingly planned logistics** Once the production phase is completed, the precision continues in the logistics: at the Nussloch site, the various pipe fittings are placed in their own boxes according to their mounting position. Everything is planned down to the finest detail. Also for the successor model to the Leica ASP300 S, the Leica ASP6025 tissue filtration system, which is manufactured in Singapore, all of the details have been painstakingly planned, including shipping from Angst+Pfister’s global logistics center.

Following successful parts qualification, Leica Biosystems aims to switch to a kanban logistics system. According to Thomas Heuss, this move will create opportunities for further optimization, a very welcome development at Angst+Pfister. The foundation for a lasting partnership has been laid.

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