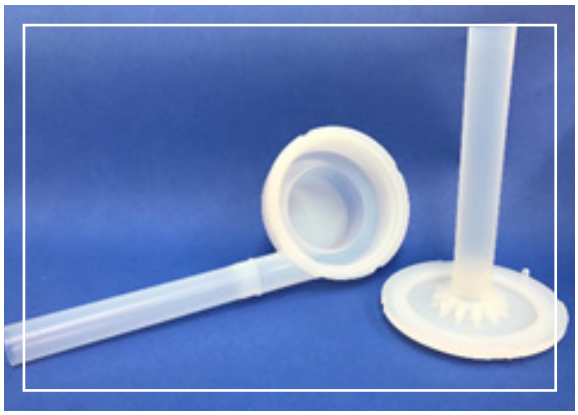
LEVITRONIX®

Transitioning from PTFE to PFA

Levitronix GmbH, located in Zurich, Switzerland manufactures innovative pumps for ultrapure fluid handling in the microelectronics, pharmaceutical, biotechnology and chemical processing industries. They had recently developed a new high flow pump that was capable of extremely low particle generation due to its unique design. Their initial development was completed on machined PTFE pump components and now Levitronix GmbH was looking to transition to molded PFA parts. The perceived benefits of molded PFA parts over machined PTFE were improved surface finishes and injection molded efficiencies.



Levitronix GmbH contacted Savillex for assistance on this project. Several components in the pump assembly were targeted for change to the injection molded PFA material. However, all current designs were based on fully machined components. Savillex engineers reviewed the designs and collaborated with Levitronix to arrive at new molded designs for the components. Uniform wall thickness considerations, fillets, gating and flow analysis was utilized to arrive at the final 'as molded' designs. Tooling was designed and constructed to produce these new injection molded parts. However, in some cases certain aspects either could not be molded or were unattainable due to tolerance constraints. To resolve these issues Savillex capitalized on its secondary operations capabilities. Some of these important features were accomplished by CNC machining operations. Other fabrication techniques including non-contact infrared welding were utilized. The final result of this project was that by fully utilizing the unique capabilities that Savillex offers, Levitronix GmbH was able to transition its product from a machined PTFE version to an improved and more cost efficient molded PFA design.

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