Savillex Life Sciences
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Particle Measuring Systems: Molded Blank Project

SUCCESS STORY

ABOUT THE CUSTOMER

Particle Measuring Systems (PMS), based in Boulder, Colorado, is the world's largest particle counter manufacturer, and sets the standard for cleanroom contamination monitoring. PMS and their technologies serve several industries, such as pharmaceuticals, life sciences, semiconductor, aerospace, cosmetics, and more.

CHALLENGE

A particle counter manufacturer was unable to source PCTFE, their preferred material, due to supply chain inefficiencies and had a difficult time finding an adequate solution.

SOLUTION

Savillex developed blank molds manufactured from PFA that the client could machine in-house.

RESULT

After cleaing some initial hurdles, Savillex refined the build and developed PFA blanks with no voids for the client-and continues to work with them to optimize.

THE CHALLENGE

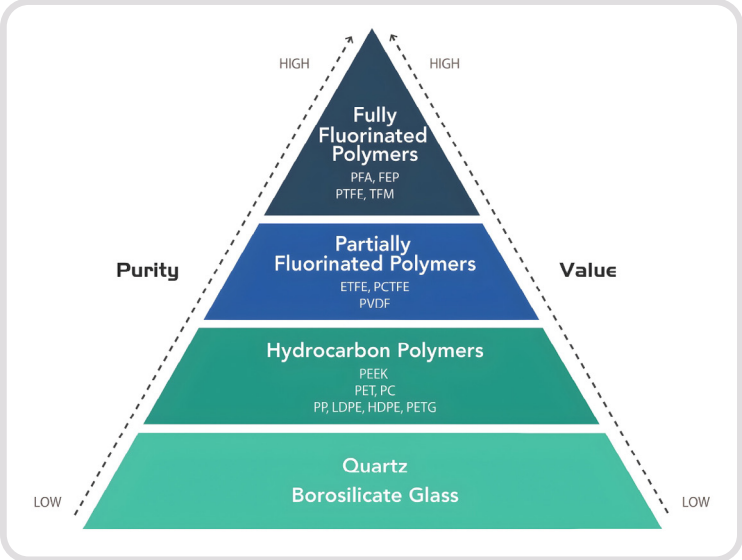
Until recently, PMS used PCTFE (polychlorotrifluorethylene) as their preferred material for any particle counter components and fittings that cam into regular contact with corrosive chemicals, like hydrofluroic and phosphoric acids.

However, due to ongoing global supply chain disruptions, PCTFE became harder to acquire, and effectively quadrupled in price.

In an effort to keep costs manageable and ensure a more reliable material supply, PMS looked to replace PCTFE with other polymers. Of course-not any polymer would meet their requirements. Their ideal material needed to be non-reactive, highly resistant to corrosion and non-leachable- which led PMS' engineering team to select PFA and reach out to Savillex.

THE SOLUTION

Many of PMS' components are produced at low volumes, so investing in and building PFA mold tols for under 100 pieces per year did not make financial sense. The idea, then, shifted to building a mold for "blanks", or, basic cylinders made from PFA that could be machined by PMS in-house in whichever manner they needed.



Savillex's engineering team set about building the blank mold, but encountered several challenges related to the unonventionally thick (1,5") wall sections that PMS required. As hot polymer is injected into a mold and then cools (and shrinks), the risk of internal voids appearing and being exposed during the machining process was concerning.

THE RESULT

After thoroughly optimizing and refining their process the Savillex team was able to create a mold that reliably produced PFA blanks with no voids.

With the groundwork laid and initial engineering challenges solved, the next stage for PMS is to have new PFA molds of near-net component shapes created. The intent here is to further reduce the amount of machining that would be required, and then put any newly created PFA parts through an exhaustive set of qualification steps.

“It was an overall excellent experience working with the Savillex team - they carried much of the engineering burden for us. We appreciated the hard work they had done to understand our unique application and they delivered a solution that we feel highly confident about.”

- Brad Rowe, Senior Project Manager, Engineering - Particle Measuring Systems

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