



Savillex

OVERVIEW
CUSTOM SERVICES

Capabilities

Savillex has developed the widest range of fluoropolymer molding and machining capabilities to meet the most demanding manufacturing challenges.

TOOLING

- In-house tooling design and fabrication - significantly reduces project time
- Single-cavity, multi-cavity and family tools
- Tool maintenance and transfers

INJECTION MOLDING

- Electric presses from 85 tons to 390 tons
- Automated work cells
- Molded parts from a few grams to over 2,000g
- Parts up to 12" long, 20" diameter
- Insert and over molding capabilities

BLOW MOLDING

- Proprietary fluoropolymer stretch blow molding technology
- ISO class 7 cleanroom manufacturing



Design and Production Process

High performance fluoropolymers such as PFA and FEP have unique properties that allow them to be used in very challenging applications, but also make them very challenging to mold. Tooling must be designed for specific flow paths and shrink factors and constructed of corrosion resistant materials. Savillex brings more than forty years of PFA/FEP molding expertise to every project. And because we do everything in house, we are able to move quickly. The typical design and production process is described here »

CUSTOMER REQUEST FOR QUOTATION

An on-line quotation request form guides the customer through the important criteria required to give Savillex engineers a thorough understanding of the customer's requirements.

Savillex is a world leader in custom engineered fluoropolymer products. With over 40 years of experience in molding fluoropolymers, our experience and commitment to quality is unsurpassed. Our custom engineered products are used all over the world, in a very diverse range of applications - from supporting fuel lines in passenger aircraft to reducing ear infections in children.

We handle the entire process from quotation request through to production of the finished product. Our tooling is designed and manufactured in house, enabling us to work very quickly and with flexibility to meet your needs. We consult with our customers at every stage in the process, from resin grade recommendation through to tool design, to ensure that the final product precisely meets our customer's needs.

Employing both injection molding and our unique stretch blow molding technology, plus secondary operations including fluoropolymer welding and laser marking, our expertise in custom molded fluoropolymers is unmatched.





SECONDARY OPERATIONS

- Machining
- Fusion welding
- Assembly and post-cleaning

ENGINEERING LAB

- Testing and qualification
- Inductively Coupled Plasma Mass Spectrometer for trace metals analysis and testing

What really sets Savillex apart is our know-how.

We can manufacture parts with unmeasurable trace metal content (typically for semiconductor and geochemistry applications), and with virtually undetectable particulate contamination (for biopharma).

Machined Parts vs Molded Parts

For prototyping or small part runs, machining a part from PTFE is convenient, and initial costs can be low. However, many companies are not fully aware of the benefits of injection molded PFA for production quantities, despite the higher initial tooling cost:

- Much lower cost per part
- Shorter turnaround time
- High purity PFA resin has lower trace metal content than PTFE
- Cleaner manufacturing process
- Very intricate features can be molded
- Logos/markings can easily be molded into parts
- PFA is translucent (PTFE is opaque)
- Significantly less "creep" with PFA compared to PTFE

INITIAL DESIGN REVIEW

Savillex engineers review and discuss the request with the customer to understand application specifics and any design constraints. Opportunities to improve part moldability and reduce cost are reviewed and a suitable resin grade is proposed.

A budgetary quotation is generated within three business days of the review.

BUDGETARY QUOTATION

This gives the customer preliminary costs for parts and tooling and allows the customer to adjust design, resin or tooling for various costing and lead time scenarios. This step is very helpful to the customer in determining the best solution without having to finalize all design documentation.

FINALIZED DESIGN AND QUOTATION

Based on the budgetary quotation, the customer provides all final design documentation, models, specifications to Savillex for final review. Upon acceptance Savillex provides a final quotation to the customer within two business days.



Materials Used

Savillex manufactures parts from melt-processable fluoropolymers including PFA, FEP, PVDF, ETFE and ECTFE. Savillex does not manufacture parts from non-melt processable fluoropolymers (PTFE and modified PTFE).

PFA (Perfluoroalkoxy)

Widest working temp range. Inert to virtually all chemicals. Very high purity. Translucent. Not irradiatable (for sterilization).

FEP (Fluorinated ethylene propylene)

Wide working temp range. Inert to virtually all chemicals. Very high purity. Almost transparent. Not irradiatable (for sterilization).

PVDF (Kynar™)

Narrower working temp range. Less chemical resistant. Very high impact strength. Translucent. Is irradiatable (for sterilization).

ETFE (Tefzel™)

Narrower working temp range. Less chemical resistant. High impact strength. Translucent. Is irradiatable (for sterilization).

ECTFE (Halar™)

Narrower working temperature range. Less chemical resistant. High impact strength. Translucent. Is irradiatable (for sterilization).

Kynar is a trademark of ARKEMA, Inc.

Tefzel is a trademark of Chemours

Halar is a registered trademark of Solvay Solexis Inc.

PURCHASE ORDER AND TOOLING DESIGN/ CONSTRUCTION

Tool design and construction begins on receipt of purchase order and is performed internally at Savillex. Tooling construction timeframe varies with the complexity of the project, but tooling is typically completed 6-12 weeks from receipt of the purchase order.

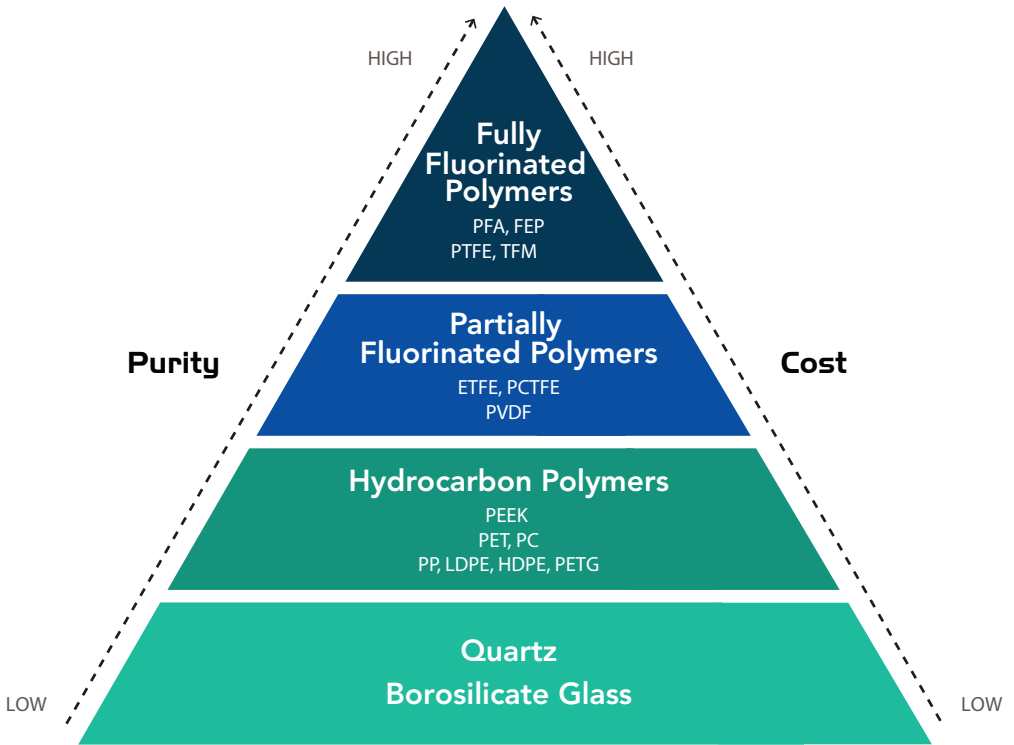
MOLDING PROCESS DEVELOPMENT

On completion, tooling is transferred to molding operations and a sampling plan is developed, based on key attributes reviewed with the customer. Molding process development continues until key part attributes are consistently reproduced. First article inspection parts and a comprehensive report are provided to the customer.

PROJECT APPROVAL

The project is complete when approval is given by the customer. Savillex prepares a documented in-process quality inspection plan to be employed when the parts are released by the customer for full production. Each release for shipment will have agreed upon quality inspection data provided.

Materials Comparison



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