

SAINT-GOBAIN MEDICAL

# QUALITY MEDICAL COMPONENTS, ENGINEERED WITH PRECISION.



# Improving care one component at a time

At Saint-Gobain Medical, we strive to make a difference in the safety and well-being of others. As a recognized leader in the medical component industry, we work closely with our customers to design, develop, and deliver quality custom components and engineered systems for the most challenging applications.

Collaborate with our experts and you'll be working with some of the brightest engineering minds in the industry. Together, we'll provide breakthrough solutions for your most demanding application needs, advancing medical technology for better patient outcomes.



*Our expertise includes silicone and thermoplastic molding, extrusion, and filtration technologies with a focus on material differentiation through custom compounding and advancement in surface modification. We harness our collective ingenuity as our team works side-by-side with you to bring new innovations to life.*

# INNOVATION THROUGH COLLABORATION

With a legacy of over 355 years of innovation as a company, and over four decades working with customers in the medical device industry, we pride ourselves in our collaborative spirit.

**TYGON®**  
Trusted Performance

Tygon® tubing is developed

Tygon® ECMO is developed for Open Heart Surgery



Launch of C-Flex® tubing, the first sealable & weldable elastomeric tubing

Advancing filtration technologies with purpose-built filters

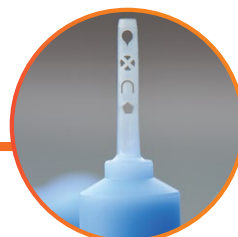
Molding the Impossible; Two-shot and micro molding technologies developed



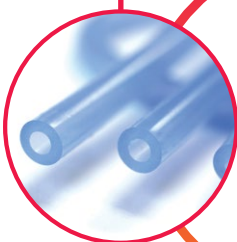
Advancement in extrusion; Bio-Sil® material & Compass™ Technology launch high precision silicone tubing

FreeWave™ specialized silicone laser processing technology developed to allow for design freedom

2020s



2010s



1970s

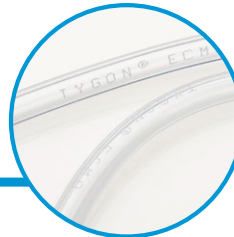
First medical silicone molding manufacturer formed in the US



1980s



1950s



1930s

1665

Saint-Gobain established



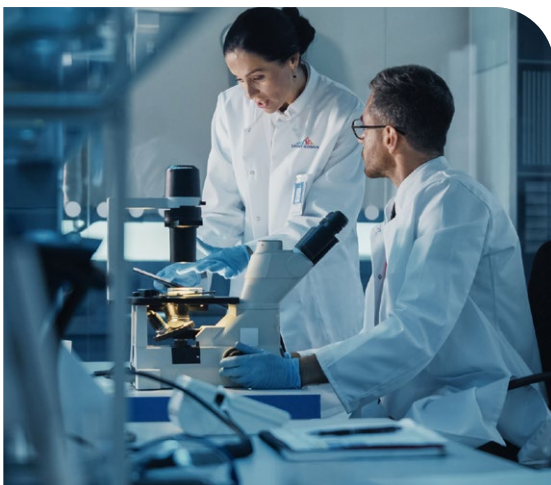
# Your trusted end-to-end resource

We work with our customers to solve technical challenges and deliver products with the highest quality. Drawing on our proven track record, deep expertise, and extensive industry knowledge, we collaborate with you to guide the success of your project.



## DEEP MATERIAL EXPERTISE

- Expertise with an extensive library of materials including: fPVC, TPO, TPU, TPE, PEBA, PEEK, FEP, PFA, PTFE, Silicone (HCR & LSR) and more
- Material analytical testing and interpretation for material benchmarking, formulation development, polymer characterization and customer support
- Global network of internal experts in material sciences and polymer processing



## DESIGN & PROTOTYPING

- Application engineering coupled with manufacturing process knowledge to support DfX
- Design, feasibility studies and testing capabilities for custom development of filtration solutions
- Dedicated equipment, production intent material and dimensionally accurate prototype parts for molding services
- Modeling simulation for improved product performance

>3,500  
RESEARCHERS

8 GLOBAL R&D  
CENTERS

## MANUFACTURING & PROCESS EXCELLENCE

- Global footprint with over 20 manufacturing sites to support local needs
- Automation, equipment, and tooling design and fabrication
- Dedicated manufacturing R&D resources focusing on process innovation and raw material sourcing
- Consistent and precise dimensional control to eliminate material variability



## CONFIDENCE IN PRODUCT QUALITY, SAFETY & EFFICACY

- Certified quality management systems (ISO 13485 and ISO 9001) in over 20 global facilities
- FDA registered facilities in US, EU and Asia
- ISO Class 7 & 8 clean rooms that comply with ISO 14644-1
- Global change control process including comprehensive customer change notification program
- Continuous adoption of regulatory requirements



# Our Capabilities

We can provide the innovative solutions you need for your most demanding applications.



## SILICONE AND THERMOPLASTIC MOLDING

- Dedicated prototyping and development center for early-stage concept and design
- Specializing in molded parts with high complexity, such as micro and multi-material components
- Best-in-class tooling management and full validation services for quality assurance
- Expertise in selecting the ideal material grade for the application



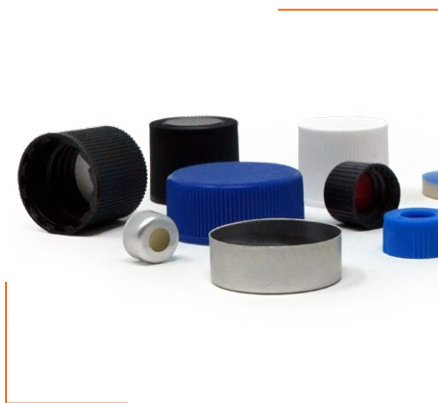
## EXTRUSION SOLUTIONS

- Standard tubing formulations including Tygon® and Bio-Sil® specifically designed for medical applications
- Portfolio of silicones, thermoplastics, and ultra-engineered polymers (e.g., PFA, PTFE, FEP, PEEK)
- Leverage our material expertise, breadth of portfolio and custom compounding services to develop the right tubing solution for your application
- Pair your medical pump with highly concentric tubing to enable precise drug delivery



## FILTRATION TECHNOLOGIES

- Develop a filter built for your specific application
- Simplify change-outs and mitigate incorrect installations by accessing over 40 standard fitting options, with the ability to mix-and-match inlet and outlet fittings
- Extend filter lifetime and optimize performance with our extensive library of over 20 micro-filtration materials
- Customize the configuration, connectivity and purification of your filter



## SPECIALTY CLOSURES

- Protect your most critical samples with our high purity closures
- Expertise in barrier films and elastomer materials to design custom closer assemblies to meet your exact specifications
- Choose from a wide range of sizes—from 8 to 89 millimeters in diameter
- Customize the thickness, durometer and the color of your liners
- Leverage our wide selection of barrier films including PTFE, FEP, PP, Polyolefin, TPEs, PTFA, ETFE and fluoropolymer alternatives

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*“I’ve always said Saint-Gobain is a really good team to work with...They are reliable, flexible, and you know they will deliver when you need them to.”*

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# Markets and Applications

With years of deep industry expertise, we craft high-performance solutions tailored to specific markets and applications. Our unwavering commitment to quality and compliance positions us as a dependable collaborator, renowned for delivering consistent and reliable solutions.



## DRUG DELIVERY

Applications include needleless connectors, infusion and enteral nutrition pumps.

- IV therapy components for bedside delivery, ambulatory pumps and auto-injection applications
- Tubing and molded components to enhance safety by ensuring consistent flow rate



## OPHTHALMOLOGY

Applications include infusion sleeves, silicone test chamber and pump diaphragm.

- Micro-silicone components that provide precise fluid management for use in cataract and vitreoretinal eye surgeries
- Silicone laser processing capabilities enabling design freedom for aspiration port



## DIAGNOSTICS

Applications include flow cytometry, immunoassay, clinical chemistry and molecular diagnostics equipment.

- A wide range of components from custom filters to specialty closures
- Sample and reagent, peristaltic pump and waste disposal tubing



## ARTIFICIAL LIFE SUPPORT

Applications include organ preservation systems, extracorporeal membrane oxygenation (ECMO) and dialysis.

- Innovative Tygon® ECMO tubing
- Custom single use systems with tubing and filter components, non-DEHP polymer tubing for superior peristaltic pump life and exceptional flexibility





## CARDIOLOGY

Applications include tubing for ablation irrigation, contrast delivery, and fluid management in structural heart and electrophysiology procedures.

- Tygon® E-LFL and other pump-compatible tubing for ablation system irrigation
- Purge line tubing for mechanical circulatory support systems and pressure management circuits



## WEARABLES

Applications include pump tubing for insulin dispensing and silicone seals for diabetic devices.

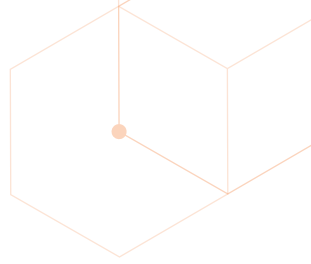
- Multi-material molded components and tubing for wearable technology



## ENDOSCOPY

Applications include endoscope reprocessing, single use endoscope and endoscopic suturing systems.

- Custom, low coefficient of friction (LCF) tubing, and filtration systems
- Components that are customizable to achieve an optimal balance of flexibility and rigidity—a key requirement for endoscopy procedures



# Case Studies

We're renowned for addressing complex technical challenges in the medical device, biotech, and pharmaceutical sectors. Our consistent track record showcases our ability to deliver successful, innovative engineered solutions tailored to these industries.

We are proud to highlight some of our impactful collaborations and project successes with customers.

## FILTRATION TECHNOLOGIES

### APPLICATION

Flow cytometry filter to remove contaminants from sheath fluid

### CUSTOMER CHALLENGES

- Filter must be installed in correct orientation
- Need to prevent leaks during filter exchange
- Desire to extend filter lifetime



## SAINT-GOBAIN SOLUTION

### Filter Performance

- Optimized filter size and media combination via performance testing

### Optimal Connectivity

- Gendered fittings at inlet/outlet prevent incorrect installation
- Valved quick-connect fittings prevent drips during filter exchange

## EXTRUSION SOLUTIONS

### APPLICATION

Peristaltic pump transfers saline to a catheter for cooling and flushing during radiofrequency (RF) ablation

### CUSTOMER CHALLENGES

- Must significantly reduce the ECG noise generated when rollers contact tubing in the pump
- Tubing needs to withstand high pressure and abrasion of aggressive pump rates
- Tubing must not generate spallation after 2-hours of use



## SAINT-GOBAIN SOLUTION

### Electrical Dissipative Tubing

Mitigating ECG noise generation while maintaining performance requirements:

- High burst pressure
- Flow rate stability
- No spallation

Enables more accurate diagnosis and increases alarm reliability

## SPECIALTY CLOSURES

### APPLICATION

Liners (or septa) are integrated into diagnostic vial caps to protect reagents and samples during storage, transport, and automated testing. They help maintain container integrity from fill through final analysis.

### CUSTOMER CHALLENGES

- Must prevent leakage under thermal and pressure variation
- Must block external contaminants to ensure accurate results
- Must be chemically compatible with diagnostic reagents



## SAINT-GOBAIN SOLUTION

### High-Performance Liners and Barrier Closures

- Silicone liners provide tight, reliable seals
- Barrier films maintain sample isolation and purity
- Inert materials avoid chemical interference
- Precision converting ensures consistent fit and function

Supports consistent test results and reliable system performance across diagnostic workflows.

## MULTI-MATERIAL MOLDING

### APPLICATION

Multi-material component for Continuous Glucose Monitoring device

### CUSTOMER CHALLENGES

- Challenging bond between low durometer silicone and polycarbonate
- Extremely tight manufacturing tolerances
- Rapid volume ramp up and commercialization



## SAINT-GOBAIN SOLUTION

### Multi-Material Bonding Resolution

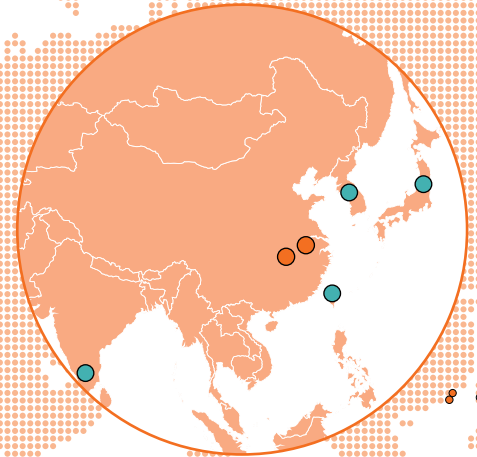
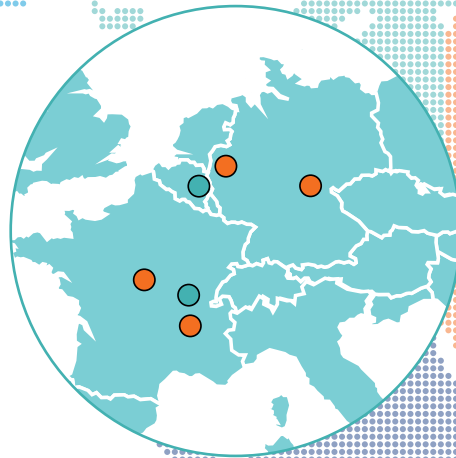
- Technical challenge solved through expertise in polymers, silicone rheology, fracture mechanics and modeling
- Custom tooling and dedication automation processes

### Expedited Deployment of Seven Manufacturing Cells

- Leveraged validation knowledge and project management to expedite rapid deployment of manufacturing cells

# ADVANCING MEDICAL SOLUTIONS AROUND THE WORLD

Our Life Sciences global footprint means we're always ready to respond to your challenges or unique needs wherever you are.



## KEY MEDICAL CAPABILITIES

### Akron, Ohio:

Thermoplastic Extrusion

### Poestenkill, New York:

High Purity Closures

### Portage, Wisconsin:

Silicone Molding & Extrusion

### Taunton, Massachusetts:

Silicone Extrusion

### Hangzhou, China:

Filtration

### Shanghai, China:

Silicone & Thermoplastic Extrusion

### Neuhaus am Rennweg, Germany:

Thermoplastic Molding

### Neuss, Germany:

Fluoropolymer Extrusion

### Charny, France:

Silicone & Thermoplastic Extrusion

### Saint-Quentin-Fallavier, France:

Silicone Extrusion

● Key Medical Capabilities

● Life Science Sites

Saint-Gobain Performance Plastics Corporation's Life Science ("Saint-Gobain") products that are used as components in the manufacture of any Medical Devices (as defined by the FDA) are sold by Saint-Gobain only and exclusively to Medical Device manufacturers for use in the manufacture, assembly or distribution of their medical devices. Medical Device manufacturers, to whom Saint-Gobain sells components or for whom Saint-Gobain acts as a subcontractor for finished products, are solely responsible for determining whether their finished products are a medical device and complying with the appropriate certifications and registrations.

**NOTE: This document is intended to provide information about the product to enable you to consider whether generally the Product meets your application need and is not intended to provide product specification. This document should not be considered a Product warranty or guaranty. To the extent this document mentions any tests done by Saint-Gobain, such tests are done under controlled laboratory circumstances and hence other factors in your use and application may impact such values.**

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