

**SAINT-GOBAIN LIFE SCIENCES** 

# BIOPROCESS SOLUTIONS CATALOG

### ABOUT US

A world leader in the development and integration of innovative materials and components, we create customized single-use solutions for the biopharmaceutical and cell therapy markets. Through our unparalleled technological expertise and worldwide resources, we develop integrated solutions for critical fluid management to meet your evolving needs.

#### **Instructions for Use**

#### **Printed Catalog:**

If viewing content from a printed version please scan each QR code located within each section to download product datasheet, view product webpage, or obtain additional resources.

#### PDF Catalog:

If viewing content from a pdf version please click on each hyperlink within each section to view product datasheet, view product webpage, or obtain additional resources.

### **Validation & Technical Documentation**

If you do not already have an account, please register using the hyperlink above or QR code to the right. Personal email addresses will be denied. Your request will be reviewed within 2 business days, and you will receive a response via email.

Once you have a Validation & Technical account and are logged in, you will then be able to request access to each document. Your access to each document will be reviewed within 2 business days, and you will receive a response via email. Please only submit requests for documents that you require access to.



# GLOBAL MANUFACTURING

20 manufacturing facilities located around the world.





# Worldwide Manufacturing Capabilities

- Facility locations across 3 continents
- Continuous expansions
- Global and regional supply capabilities
- Harmonized global Quality Management Systems





# PRODUCT PORTFOLIO

Customized Single-Use Solutions for the Biopharmaceutical and Cell Therapy Markets



COMPONENTS
Pages 5 - 16



**SINGLE-USE ASSEMBLIES**Pages 17 - 23



CELL THERAPY
Pages 24 - 27

# **COMPONENTS**

A wide range of component product offerings available for use in the bioprocessing industry.



**CONNECTION & FLOW CONTROL** Pages 6 - 7



CONTAINMENT Page 8



FILTRATION
Page 9



FLUID TRANSFER & VALPLUS™
Pages 10 - 14



LABORATORY
Page 15



MEASUREMENT Page 16

### CONNECTION & FLOW CONTROL

A portfolio of single-use connection and flow control solutions that focus on leak-free fluid management.



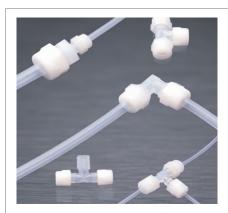
#### **BarbLock® Ultra-Secure Retainers**

The most advanced design available in today's demanding connective applications.

- Replaces inconsistent and leak-prone cable ties and traditional clamps
- Compatible with all flexible tubing materials
- Provides 360° radial crimp behind the barb



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#### PharmaFluor® PFA Fittings

Combine high purity with the robust performance of compression-style fittings.

- Chemically inert
- Ultra-pure
- Corrosion resistant



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#### **Pure-Fit® SC Sterile Connectors**

Connective technology that makes it possible to create true sterile connections anywhere.

- Silicone valve design leaves no gaps, eliminating problems associated with other systems
- Laser etched for complete lot traceability
- Triple-redundant locking mechanism simplifies validation, reducing chances of operator error



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### Pure-Fit® SIB® Smooth Inner Bore Systems

Eliminates entrapment and leak points that can occur with traditional assembly systems.

- Total smooth inner bore (SIB) transition design
- No excessive voids at the interface or in the fluid path
- Complete 360° compression



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#### **Pure-Fit® TC Tube Clamps**

A new generation of clamping technology for the pharmaceutical industry.

- Provides complete fluid stoppage
- Smooth edges and corners help prevent punctures and ruptures
- Can be installed on or over tubing or finished assemblies



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### **Pure-Fit® TCL Large Tube Clamps**

Designed to accommodate larger diameter and thick wall tubing applications.

- Compatible with large diameter, thick wall, rein forced and multilayer tubing
- Can be utilized in flow position
- Provides complete fluid stoppage



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#### Pure-Fit® Tru Valve System

Can be installed over standard flexible tubing or a finished assembly system.

- Simple to operate and install
- Offers total flow variability
- Butterfly mechanism allows installation over tubing and finished assemblies



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### CONTAINMENT

Bags in fully customizable configurations for bioprocessing applications with key properties based on material.



### **Bioprocess Bags**

Single-use bags constructed of a multilayer film optimized for bioprocessing applications.

- Available as manifold system
- Top or bottom drain
- Recirculation loops and sampling systems



### ADDITIONAL RESOURCES

### **Custom Bag Guide**

Customize your bag assembly using our how-to guide.



### FILTRATION

Specially engineered filtration solutions customized to improve process efficiency.



#### **PureFlo® Z Series PES**

Gamma-irradiatable, easy-to-use filtration units.

- Hydrophilic, asymmetric PES membrane
- Exceptional throughput capacity and flow performance
- Optional ZenFlo® built-in highly asymmetric PES prefilter





#### PureFlo® PTFE

Exceptional chemical resistance, thermal strength, and flow performance.

- Autoclavable
- Hydrophobic PTFE membrane
- Exceptional flow performance, thermal strength, and chemical resistance





#### PureFlo® PE

Available in a complete spectrum of sizes to simplify scale-up.

- Gamma-irradiatable
- Hydrophobic PE membrane
- Exceptional flow performance, resulting in a light-weight, compact filter designed to promote process efficiency



### ADDITIONAL RESOURCES

### **Properties of PureFlo® Guide**

Chemical Resistance Guide

### <u>PureFlo® Pharmaceutical Compounding</u>

Economic, efficient, and easy-to-use capsules.

### **Custom Engineered Filtration Technologies**

Develop specialized filtration solutions that are tailored to achieve optimal performance.

### FLUID TRANSFER

A full range of tubing and hoses best suited for the biopharma and pharmaceutical markets.

#### **Hoses - Silicone**



# SaniSeal™ Hose Identification System

Combine labels with a system of color-coded bands for easy identification of hoses.

- Zero areas of entrapment
- Easy to clean and sanitize
- Will not peel, crack, or blister



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### Sani-Tech® STHT®-R Silicone Hose

Ultra-flexible, high-purity hose that was developed for higher-pressure applications.

- Biopharmaceutical-grade silicone hose
- High pressure ratings
- Ultra-flexible



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# Sani-Tech® STHT®-R-HD Heavy Duty Silicone Hose

Ultra-flexible, high-purity hose that was developed for extreme pressure applications.

- Biopharmaceutical-grade hose
- High pressure ratings
- Ultra-flexible



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# Sani-Tech® STHT®-WR Silicone Hose

Maintains high pressure ratings with full vacuum capabilities.

- Biopharmaceutical-grade hose
- Ultra-flexible bend radius
- Available in 25-foot standard lengths



DATASHEET & ADDITIONAL
RESOURCES

#### **Tubing - FEP**



### **PharmaFluor® FEP Tubing**

Formulated to resist the absorption/adsorption of aqueous fluids.

- Very low gas permeability
- Chemically inert and highly resistant to aggressive chemicals
- Ultra-pure



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#### **Tubing - TPE**



### **C-Flex® Biopharmaceutical Tubing**

The original patented thermoplastic elastomer tubing.

- Sealable and weldable either pre- or poststerilization
- Sterilizable by gamma and x-ray irradiation as well as autoclave
- Complies with USP Class VI and ISO standards



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### **C-Flex®** Braided Tubing

Braid-reinforced tubing for high pressure fluid processing.

- Biopharmaceutical grade
- Validation package available for all C-Flex promoted products
- Compatible with overmolded technology for single-use systems



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### PharmaPure® Low Spallation **Pump Tubing**

Premium, low spallation, biologically compatible peristaltic pump tubing.

- Ultra-low particulate spallation
- Outlasts silicone tubing in peristaltic pumps by up to 30 times



**DATASHEET & ADDITIONAL RESOURCES** 



### PharMed® BPT Tubing

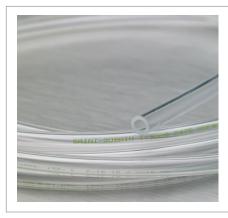
Formulated to withstand the rigors of peristaltic pumping action.

- Outlasts silicone tubing in peristaltic pumps by up to 30 times
- Sterilizable by gamma and x-ray irradiation as well as autoclave
- Withstands repeated autoclaving



**DATASHEET & ADDITIONAL** RESOURCES

#### **Tubing - TP**



### Tygon® 2475 High-Purity Tubing

Entirely clear and flexible tubing for sensitive fluid transfer applications.

- High clarity allows detection of fluid flow and particulate contamination
- Low gas permeation
- Exceptionally low absorption/adsorption compared to silicone



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### Tygon<sup>®</sup> 2475 I.B. High-Purity **Pressure Tubing**

Engineered with textile reinforcement to withstand higher pressures.

- Extremely low sorption to aqueous fluids
- Plasticizer-free
- Meets USP Class VI criteria



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#### **Tubing - Silicone**



#### Sani-Tech® SPT-60L Silicone Tubing

Premium platinum-cured silicone tubing designed for the most exacting requirements of final fill operations.

- Very long pump life
- Best in class filling accuracy and precision
- Low spallation



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### Sani-Tech® STHT®-C Silicone Tubing

Withstands repeated autoclaving and resists the adherence of sanitary fluids.

- Pharmaceutical grade
- Excellent flexibility and bend radius
- Long flex life



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### Sani-Tech® Ultra Silicone Tubing

Ultra-pure, biopharmaceutical grade silicone tubing with long pump life capabilities.

- Platinum-cured tubing
- 50 or 65 Shore A hardness options
- Unsurpassed surface smoothness



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### ADDITIONAL RESOURCES

### **Tubing Selection Guide**

Select biopharmaceutical tubing based on your application need.

### **Chemical Resistance Guide**

Learn about the chemical resistance properties of our tubing based on material type.

### ValPlus™ Tubing Certification

Provides customers with an industry first opportunity to mitigate risk and add value into their production process steps.

# VALPLUS™ TUBING VALIDATION CERTIFICATION

Eliminate the need to rinse tubing with water for injection.



#### ValPlus™

Validates the fluid path of the tubing using a single, normal ANSI Level II sampling plan to meet standard industry requirements. Available for select tubing sizes and formulations.

- C-Flex® 374, 082, and 072 tubing
- Sani-Tech® STHT®-C, STHT®-65, and STHT®-R tubing
- PharmaFluor® tubing



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#### Sustainability Benefits of ValPlus™

ValPlus™ eliminates the need for customers to rinse and cleanse the inner part of the tube.

- Reduce usage of Water for Injection (WFI) consumption
- Reduce energy required to dry the tubes
- Reduce operation time and resources required on site



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### ADDITIONAL RESOURCES

### ValPlus™ Whitepaper

Opportunity to Mitigate Risk with Saint-Gobain ValPlus™ Certification



### LABORATORY

Tubing specifically formulated for laboratory applications.



# Tygon S3™ E-3603 non-DEHP Laboratory Tubing

General laboratory application tubing offering superior life.

- Non-DEHP, bio-based plasticizer
- Bio-based formulation reduces environmental impact





#### Tygon S3™ E-LFL Tubing

Superior pump life tubing up to 25 psi of back pressure

- Non-DEHP, bio-based plasticizer
- Bio-based formulation reduces environmental impact
- Longest flex life of any clear Tygon® tubing, reduces downtime due to pump failure



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#### Tygon<sup>®</sup> E-1000 Ultra-Soft Tubing

Ideal for complicated laboratory setups as this tubing resists twisting and collapse.

- Soft and flexible for lab set-ups
- Flexible at low temperatures
- Resistant to corrosive chemicals for laboratory applications



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### MEASUREMENT

Gamma stable, single-use PVDF flowmeters are resistant to chemicals and high pressures.



# Single-Use PVDF Clamp Flowmeter

Reduce down time and prevent cross contamination.

- Smallest available housing with screw gap
- Mechanically strong PVDF material
- High resolution square wave output



**RESOURCES** 



# Single-Use PVDF Clip Mounting Flowmeter

Designed to perform a fast and easy exchange of flow tubes.

- For flexible use and easy to install
- Measuring with revolutionary infrared turbine rotor reflection





# Single-Use PVDF Tubeholder Flowmeter

Most commonly used in biopharma applications.

- Solid model with four screw gaps for easy mounting
- Pharmacopeia (Class VI)
- PVDF models are gamma stable up to 50 kGy



# SINGLE-USE ASSEMBLIES

Custom-engineered and overmolded assemblies best-suited for single-use applications.



OVERMOLDING CAPABILITIES

Pages 18 - 19



**CLOSURE SYSTEMS** 

Pages 20 - 21



FINAL FILL CUSTOM ASSEMBLIES

Pages 22 - 23

### OVERMOLDING CAPABILITIES

Our seamless flow path overmolding technology and range of tubing products support several critical fluid path requirements.



# Bio-Simplex® C-Flex® Overmolded Assemblies

Overmolded technology combines C-Flex® tubing into a unified, leak-free assembly.

- Biopharmaceutical-grade thermoplastic elastomer
- Overmolding technology for seamless construction
- Maintains inner bore diameters



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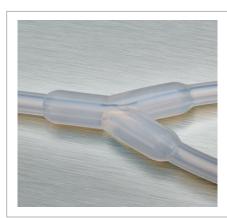
### Bio-Simplex® C-Flex® Overmolded Tubing Assemblies (TA)

C-Flex® tubing assemblies available with either molded or heat-sealed tubing ends.

- Designed for single-use
- Molded or heat-sealed tubing ends available
- Unobstructed fluid path



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# Sani-Tech® Sani-Link® Silicone Overmolded Assemblies

SIB® technology eliminates particle entrapment and potential for contamination.

- Biopharmaceutical-grade assemblies
- Reduces assembly time and process set-ups
- Eliminates the entrapment and leak-point areas associated with fittings



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### Sani-Tech® Silicone Overmolded Tubing Assemblies (TA)

Integrally bonded with fully integrated sealing features.

- Ultra-pure, biopharmaceutical grade silicone materials
- Unsurpassed surface smoothness
- Polysulfone or stainless steel back-up cups

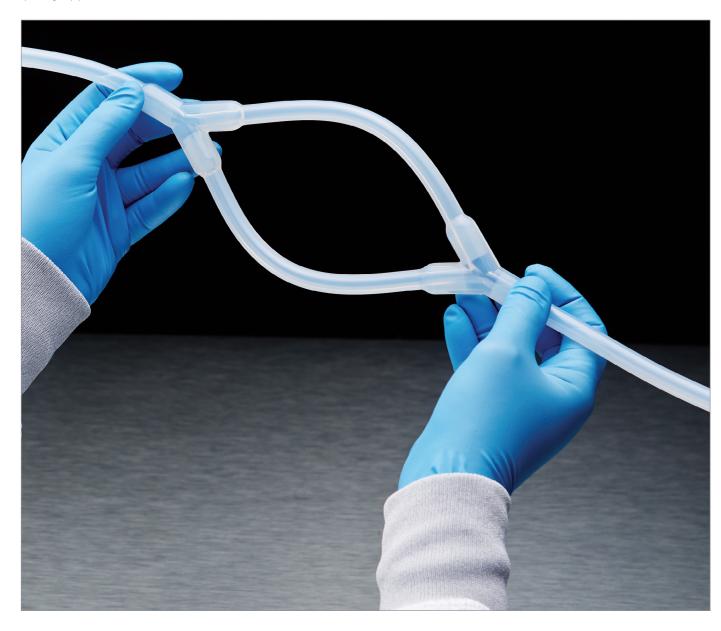


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### ADDITIONAL RESOURCES

### **Our Approach to Assemblies**

Adaptation to your system, safe connections, dedicated sites for assemblies, and a global validation & quality approach.



### **CLOSURE SYSTEMS**

Systems, closures, and stoppers that assure a sealed pass of critical fluid through various tubing types.



### Bio-Simplex® Erlenmeyer Flask Systems

Eliminate the need for cleaning and reduce risk from contamination.

- Designed for single-use
- Secure seal against plastic, glass, and metal
- Unobstructed fluid path



DATASHEET & ADDITIONAL RESOURCES



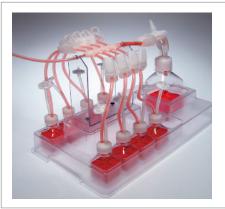
### Bio-Simplex® Media Bottle Assembly Systems

Available in a range of commonly used sizes from 60mL to 2L.

- Designed for single-use
- Unobstructed fluid path
- Extremely low levels of extractables



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### Bio-Simplex® Sampling Manifold Systems

Economically designed for the single-use market and reduce the risk of cross-contamination.

- Designed for single-use
- Unobstructed fluid path
- Extremely low levels of extractables



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### Bio-Simplex® Spinner Flask Accessories

Save time and cost associated with assembly, cleaning, and validations.

- Secure seal against plastic, glass, and metal
- Unobstructed fluid path
- Extremely low levels of extractables



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#### **EZ Top® Container Closures**

Reduce the risks from cleaning and assembly of repeat-use closures.

- Reduce cleaning and assembly time and contamination risk from repeat-use closures
- Elastomeric seal against glass, plastic, and metal surfaces
- Unobstructed fluid path



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#### Sani-Tech® Silicone Stoppers

Platinum-cured and outperform standard neoprene and rubber stoppers.

- Biopharmaceutical-grade silicone stoppers
- Unsurpassed surface smoothness
- Resists cracking and spallation



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### ADDITIONAL RESOURCES

### **Our Approach to Assemblies**

Adaptation to your system, safe connections, dedicated sites for assemblies, and a global validation & quality approach.

### FINAL FILL CUSTOM ASSEMBLIES

Trust us with the design, quality, and performance of your final fill assembly.





### **Bioprocess Bag**

Constructed of a multilayer film optimized for bioprocessing applications.



### **Overmolding**

Seamless flow path overmolding technology and range of tubing products support critical fluid path requirements.

Innovations that improve performance and ergonomics.



### **Port Disk Adaptor**

Overmolded adaptor eliminates fluid path dead zones introduced by barbed fittings.



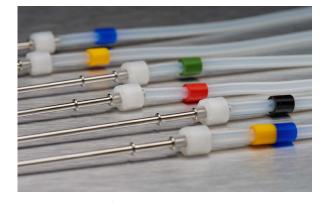
### **Multi-Port Adaptor**

Simplifies final fill assembly design by consolidating flow management into a single manifold versus multiple leg designs.



#### Needles

Needles can be sourced from a number of needle suppliers to support specific equipment and process needs.



#### **Line Identification**

Simplify operator installation and setup of the filling line.



#### **Needle Protection**

Packaging solution to protect needles during packaging/shipment.



SCAN TO LEARN MORE ABOUT FINAL FILL CUSTOM SOLUTIONS

### CELL THERAPY

Standard product lines, custom assembly solutions, and custom molding capabilities for cell culture and cryopreservation applications.



CELL CULTURE & PROCESSING BAGS
Page 25



CRYOPRESERVATION





CUSTOM CAPABILITIES
Page 27

# CELL CULTURE & PROCESSING

# BAGS

Available for culturing of suspension cells, transduction and transfection applications, and increased rates of gas transmission as required by rapidly expanding cell types.

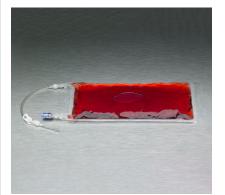


#### **VueLife® "C" Series Bags**

Designed for the culturing of suspension cells, such as lymphocytes and monocytes.

- High purity
- Closed system
- Extreme operating temperature range





#### **VueLife® "AC" Series Bags**

Better promotes cell and protein adhesion to the surface of the bag.

- High purity
- Closed system
- Extreme operating temperature range





#### **VueLife® "HP" Series Bags**

Highly permeable laminate allows for increased rates of gas transmission.

- Steam sterilized, SAL 10<sup>-6</sup>
- Transparent to visible light
- Closed system



### ADDITIONAL RESOURCES

### **Fluid Transfer Assemblies**

These assemblies include a broad choice of products, including, but not limited to: C-Flex® tubing, Tygon® tubing, syringes, clamps, and luer adapters to address all fluid transfer needs.

### CRYOPRESERVATION

Safely freeze and protect biologics at temperatures down to, and even beyond, liquid nitrogen temperatures of -196°C.



#### **KryoSure® Cryopreservation Bags**

Closed system for freezing, thawing, and transfer of sterile contents.

- High purity
- Closed system
- Extreme operating temperature range



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### KryoSure® Overwraps

Bags with one open end used to add a layer of protection during cryopreservation.

- Made from same USP Class VI, FEP used for KryoSure® freezing bags
- Available as sterile and non-sterile



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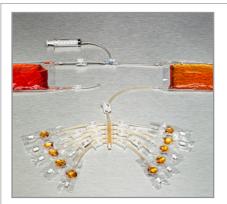
### ADDITIONAL RESOURCES

### **Fluid Transfer Assemblies**

These assemblies include a broad choice of products, including, but not limited to: C-Flex® tubing, Tygon® tubing, syringes, clamps, and luer adapters to address all fluid transfer needs.

# CUSTOM CAPABILITIES

Configure customizable cell therapy systems using our large product portfolio and custom injection molding and overmolding options.



#### **Custom Assemblies**

Fully integrate our vast range of products into a customizable system.

- Containers and tubing
- Filters and connectors
- Closures and manifolds





#### **Custom Molding**

We offer a variety of custom injection molding and overmolding options.

- Plastic injection molding & overmolding
- Advanced automation



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### SUSTAINABILITY

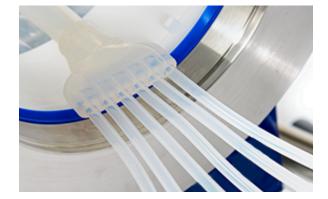
Committed to delivering innovative solutions for the biopharmaceutical market that maximize impact for our customers, while minimizing our footprint.





#### **Responsible Manufacturing**

To continuously improve our environmental performance, 60% of our plants obtained the Environmental Management certification ISO 14001.



### **Single-Use Technology Initiatives**

We are continually innovating in the single-use space to help decrease CO2 emissions, minimize the use of harsh cleaning chemicals, and drastically reduce water consumption.



#### **Customer Collaboration**

We take an innovative approach to developing concrete initiatives with our customers, such as collaborative projects on environmental performance.



SCAN TO LEARN MORE ABOUT OUR VISION ON SUSTAINABILITY

CONTACT US: SUSTAINABILITY.BPS@SAINT-GOBAIN.COM

### CONTACT US

#### **Get in Touch**

- Our Sales team can help you learn more about our products, capabilities, and solutions.
- Our Customer Service team can help you with product selection, quotes, or order support.
- Our Applications Engineering team can help you with technical questions regarding products or applications.
- Our Quality team can help you with questions related to our quality policies.





Our Gaithersburg, MD Management Team

### The Bioprocess Solutions Business of Saint-Gobain Life Sciences

An industry leading provider of material science based solutions for single-use fluid management, including TPE and silicone tubing, connection and flow control components, bioprocess and cell culture bags, filtration products, sensors, and over-molded technology, all available in customized assemblies that are produced in 20 manufacturing facilities located around the world.

Brand names are registered trademarks of Saint-Gobain.

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