Sani-Pro® High-Purity Piping and Components

**The Ultimate in High Purity**
Sani-Tech® High-Purity Piping Systems utilize only the highest purity materials and connective technologies. Pipe and components are offered in natural virgin polypropylene and Kynar® PVDF materials. Sani-Tech® connective technologies include S.I.B.® (Smooth Inner Bore) welding and sanitary ferrule connections. Other non-metallic piping systems employ connections that can create internal entrapment areas. Our focus is entirely on the transfer of high-purity fluids utilizing the best possible methods.

**Superior Flow Characteristics**
Sani-Tech® piping systems offer exceptional flow characteristics. Our piping and components are manufactured with inner diameter dimensions equivalent to stainless steel tubing. Because of this design feature, our products will mate to stainless steel connections with no changes in diameter or creation of entrapment areas. Sani-Tech® systems also feature sweep elbows, which allow improved flow over sharp elbows.

**Outstanding Service and Support**
Saint-Gobain Performance Plastics offers free technical assistance and a knowledgeable network of sales representatives committed to your complete satisfaction. We will help you to select the right Saint-Gobain Performance Plastics product for your specific requirements. We will educate, inform, and demonstrate the advantages of Sani-Tech® High-Purity Piping and Components over other competitive piping systems.

**Sani-Tech® Pressure Ratings**

<table>
<thead>
<tr>
<th>Size</th>
<th>Sanitary Ferrule (PSI)</th>
<th>S.I.B.® Fusion (PSI)</th>
<th>Sanitary Ferrule (PSI)</th>
<th>S.I.B.® Fusion (PSI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches</td>
<td>mm</td>
<td>3/4</td>
<td>14.2</td>
<td>150</td>
</tr>
<tr>
<td>1</td>
<td>21.7</td>
<td>125</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>1-1/2</td>
<td>34.4</td>
<td>125</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>2</td>
<td>47.1</td>
<td>125</td>
<td>125</td>
<td>150</td>
</tr>
<tr>
<td>2-1/2</td>
<td>59.8</td>
<td>50</td>
<td>75</td>
<td>125</td>
</tr>
<tr>
<td>3</td>
<td>72.5</td>
<td>50</td>
<td>75</td>
<td>75</td>
</tr>
</tbody>
</table>

**Temperature Correction Factors**

<table>
<thead>
<tr>
<th>°F</th>
<th>°C</th>
<th>Sani-Pro® T</th>
<th>Sani-Pro® K</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>38</td>
<td>.85</td>
<td>.90</td>
</tr>
<tr>
<td>125</td>
<td>52</td>
<td>.65</td>
<td>.80</td>
</tr>
<tr>
<td>175</td>
<td>80</td>
<td>NR</td>
<td>.60</td>
</tr>
</tbody>
</table>
## Table of Contents

- High-Purity Non-Metallic Systems for Critical Applications ............................................. 2
- Fabrication Equipment ........................................................................................................ 3
- Sani-Tech® Materials ........................................................................................................ 4
- Tubing and Fittings ............................................................................................................. 5
- Valves .................................................................................................................................. 6
- Flow Measurement ............................................................................................................... 7
- Gooseneck Faucets ............................................................................................................. 7
- Sanitary Adapters ................................................................................................................ 8
- Sight Gauges ......................................................................................................................... 8
- Micro Tubing and Components ............................................................................................ 9
- Custom High-Purity Fabrications .......................................................................................... 9

---

Can't find the components or materials you need?

Saint-Gobain Performance Plastics can custom-fabricate components for your application. Contact your authorized distributor, your local sales representative or call (908) 218-8888 or 1-800-435-3992 to discuss your needs.
Sani-Tech® gives the research and development professional, system designer, process engineer and bio-engineer freedom of choice. We offer a complete line of sanitary processing systems and related components, including fabrication equipment for field installation as well as small-scale bench-top systems for research and process development. These products are manufactured with time-proven materials, polypropylene and Kynar® PVDF, which meet and/or surpass FDA and USP standards and regulations.

Sani-Tech® high-purity piping systems are easier to install and maintain than stainless steel piping systems. Thermoplastic systems require no boroscoping, passivation, or derouging. Sani-Tech systems also eliminate the need for routine shut down and sanitation cycles.

Most components are reusable and reconfigurable. Complete process control is gained through simplicity of design and consistency of contact surface, as well as uniformity of flow criteria within all flexible and rigid products.

If you have a demanding application and cannot find the right product in this catalog, please contact us to discuss it. Saint-Gobain Performance Plastics specializes in solving unique application and process problems.
Sani-Tech® in-field fabrication equipment is designed for high-purity piping installations for reverse osmosis (RO)/deionized (DI) water systems, USP and WFI water systems, research labs and hospitals, chemicals and custom processing. S.I.B.® (Smooth Inner Bore) fusion equipment and the flange former tools are designed for ease of use and convenience during system construction.

**Sani-Tech® S.I.B.® 2 Fusion Equipment**

The Sani-Tech® S.I.B.® 2 fusion welding tool is a better way to install high-purity plastic piping systems. S.I.B.® technology creates a smooth interior surface at the tubing weld, eliminating all beads, crevices, and intrusions into the fluid stream. The smooth surface reduces the areas for contaminants and bacteria to collect. The updated S.I.B.® 2 tool delivers faster weld times and increased weld identification and traceability, and also offers improved durability and ease of use.

Sani-Tech® high-purity piping systems installed with Smooth Inner Bore technology are ideal for pharmaceutical and biotechnology facilities. The entrapment-free interior surface combined with our high-purity piping and components creates the ultimate high-purity system.

**Sani-Tech® Flange Forming Systems**

The flange former is a bench-top machine designed to quickly and easily create a sanitary ferrule on polypropylene and PVDF piping in sizes from 3/4” to 2”. These ferrules are connected using a sanitary gasket and Sani-Tech® true union clamps. The sanitary ferrules and pipe I.D. will match dimensionally to stainless steel sanitary ferrules for ease of connection to all equipment. (Connection to a 1” stainless steel sanitary ferrule requires the use of a molded adapter.)

**Convenient and Cost-Effective Options**

Sani-Tech® fabrication equipment is available for purchase, long-term lease or short-term rental. Select the option that best suits your system requirements and your budget. Contact Sani-Tech® at (908) 218-8888 or 1-800-435-3992 for details.
Sani-Tech® uses only the highest purity materials to ensure the quality of your ultra-pure water or chemical transfer. All piping and components are manufactured with polypropylene or Kynar® PVDF, both high-purity thermoplastic materials. These materials are preferred in applications where the highest purity water quality is desired. Thermoplastic materials have been shown to be less susceptible to biofilm growth than stainless steel, due to the much higher rate of ion contamination by stainless steel.

**Sani-Pro® T Polypropylene Tubing**

Natural, unpigmented Sani-Pro® T polypropylene tubing is extremely tough and durable. It is inert, has excellent chemical resistance and will not corrode, scale or pit on contact surfaces. It is non-conductive and is not subject to galvanic action. It is an excellent choice for most moderate service applications. Sani-Pro® T tubing is easy and economical to install and maintain.

**Features and Benefits**
- Operating temperature up to 125°F
- Extremely tough and durable
- Excellent chemical resistance
- Will not corrode, pit or scale
- Non-conductive

**Regulatory Compliance**
- 21 CFR 177.1520 (for use with food products)
- USP Class VI

**Typical Applications**
- Pharmaceutical
- Food/beverage
- Dairy
- Hospital
- University
- RO/DI water systems

**Sani-Pro® K PVDF Tubing**

Sani-Pro® K tubing is manufactured from natural, unpigmented Kynar® polyvinylidene fluoride (PVDF) resin, the material of choice for high-purity chemical, pharmaceutical and semiconductor system applications. PVDF is a durable engineering thermoplastic that combines mechanical strength and durability with outstanding chemical resistance.

Sani-Pro® K PVDF tubing, fittings and valves have excellent surface smoothness and very low extractables and TOC levels. They have outstanding resistance to aggressive chemicals, ozone and UV radiation.

**Features and Benefits**
- Operating temperature up to 175°F
- Superior chemical resistance
- Resistant to UV radiation
- Will not corrode or pit
- Excellent creep resistance
- Non-conductive

**Regulatory Compliance**
- 21 CFR 177.2510 (for use with food products)
- USDA
- 3-A
- NSF-61
- USP Class VI

**Typical Applications**
- Pharmaceutical
- Biotechnology
- DI water systems
- Semiconductor
- Food/beverage
- USP water systems
- WFI water systems
Sani-Tech®’s complete line of sanitary tubing and fittings is ideal for high-purity systems. Sanitary flange connections offer the purity required for the most demanding applications.

These products are manufactured with high-purity resins that meet FDA and USP standards and regulations. Select from the following parts:

**Tubing**
Sani-Tech® polypropylene and PVDF tubing is extruded to stainless steel tubing dimensions to allow smooth connection to stainless steel components with no pressure drop.

**Tees**
Available in standard, short bull, cross tee, reducing, and threaded styles.

**Sanitary Reducers**
Choose from concentric and eccentric styles that connect any size tubing to any smaller size.

**Sanitary True Union Clamps**
Standard, heavy-duty and ultra heavy-duty styles available.

**Elbows**
Choose from 45° sweep elbows and 90° sweep and sharp elbows.

**End Caps**
Solid and tapped styles available. Your choice of tap size.

**Gaskets**
Choose from silicone, Buna-N, EPDM and Viton®.

*All Sani-Tech® fittings are also offered with S.I.B.® ends for use with our S.I.B.® welding equipment.*
Sani-Tech® manufactures sanitary valves for most high-purity fluid applications. Sani-Tech® valves can be used for tank connections, venting, point-of-use, or isolating fluid streams, and are manufactured with sanitary connections for easy installation. Available in 2- or 3-way configurations in polypropylene (Sani-Pro® T) and PVDF (Sani-Pro® K) materials in the following designs:

**Diaphragm Valves**

For use in high-purity water, chemical and process lines. Valves have a smooth fluid path with no pockets to harbor bacteria or contaminants. Fluid comes in contact with only two valve components, the body and diaphragm. These valves can be pneumatically actuated.

**Ball Valves**

Rugged, reliable high-flow valves that provide economical, dependable service in a wide range of chemical and high-purity applications. These valves are compact and feature Teflon® seats and seals for smooth operation, stainless steel shafts and trunion ball design. They can be fitted with pneumatic or electric actuation.

**Pressure Regulators**

Designed to handle ultra-pure or corrosive fluids with inlet pressures up to 150 psig at 75°F, and control downstream pressure from 5 to 75 psig. A regulator prevents downstream system pressure from exceeding the desired set pressure. The regulator shuts down when the set pressure is reached to protect downstream equipment and instrumentation. As downstream demand increases, the regulator opens to fill the demand. The design incorporates a poppet seat at the valve orifice to prevent sticking and double U-cap seals on the internal shaft to prevent inlet pressure from affecting the sensing of the downstream line pressure. One-piece body construction eliminates internal leakage.

**Pressure Relief Valves**

A very versatile and widely used valve for high-purity water and chemical transfer systems. This is a normally closed valve that will open when the manually adjustable set pressure is reached. This valve is used for the following applications: pressure relief valve, back pressure regulator, pressure bypass valve, and back pressure valve. This valve is available in both angle and in-line configurations.

**Zero Dead-Leg Valves**

These unique valves combine a diaphragm valve, tee and reducer into one and eliminate all “dead legs” and stagnant areas found in conventional valve/tee assemblies. Designed to provide a long service life in pharmaceutical, biotech, semiconductor and laboratory systems, high-purity zero dead leg valves can be pneumatically actuated.

**Ball Check Valves**

These valves utilize a long-life Viton® seat and floating ball design to allow fluid flow in only one direction for a wide variety of applications. The unique valve design prevents sticking and chattering and allows installation in vertical and horizontal positions.
Flow Measurement

Sani-Tech® offers components for flow measurement in high-purity piping applications. Components are all available with polypropylene or PVDF sanitary connections.

**Gauge Guards**

Designed for use where ultra high-purity is required in sanitary applications. Two versions available. The in-line version eliminates piping “dead legs” that can encourage bacterial growth and contamination. A flexible elastomer spool ensures reading accuracy for pressure applications. The vertical version is an economical alternative that uses a flexible Teflon® diaphragm as a protective barrier between the process fluid and the gauge guard. Gauge guards are liquid-filled and range from 0 to 100 psig. Alternative ranges are available.

**Flow Meters**

Constructed of polysulfone, which is well suited for high-purity or chemical applications. Flow meters are durable, and resistant to corrosion, heat and abrasion. They feature an easy-to-read scale in a variety of ranges for liquid and air (STP) in 3/4” to 2” sizes. They are used in reverse osmosis, semiconductor, film and X-ray processing and deionized water applications. They withstand pressures to 150 psig and flow rates to 130 GPM.

**Gooseneck Faucets**

Sanitary gooseneck faucets utilize the same non-metallic contact surfaces as our sanitary piping systems. They are available in unpigmented natural polypropylene and PVDF materials and meet and/or exceed FDA, USDA and USP standards. They are specifically designed for ultra high-purity water systems in biotechnology, pharmaceutical and microelectronics applications, as well as related R&D laboratory benches and sink areas. These innovative designs are equipped with sanitary end connections as a standard for complete integration with Sani-Pro® piping systems, flexible hoses and components.

**Designs:**
- Bench mount non-recirculating
- Bench mount recirculating
- Wall mount non-recirculating
- Wall mount recirculating
- Total recirculating
- Vacuum breakers
Sani-Tech® sanitary adapters are used to help combine different connective technologies to complete your system. By using materials that meet or exceed USP, FDA, USDA and 3-A standards, you can easily adapt from any flexible tubing, thread or metric connection to a sanitary ferrule. Standard adapters include:

**ANSI Flange Adapters**
Sanitary flange adapters that connect to 150# ANSI flanges.

**Pipe Thread Adapters**
Pipe thread adapters connect any size sanitary ferrule to your choice of male and female pipe thread from 1/8” to 3” diameter.

**Hose Barb Adapters**
These adapters connect any size sanitary ferrule to your choice of hose barb 1/8” to 3” diameter.

Sight gauges create a “window” for visually monitoring your process stream in a piping system. They are used in water and food processing systems, chemical plants, and process lines. Assemblies are supplied to your specified length with sanitary ends for easy installation using standard sanitary gaskets and Sani-Tech® heavy-duty clamps. Available in polysulfone (PS) in I.D. sizes from 3/4” to 4”.
Micro Tubing and Components

The Sani-Tech® micro tubing line was created specifically for small, bench-top tubing systems. By combining sanitary ferrule connections with polypropylene (Sani-Pro® T) and PVDF (Sani-Pro® K) microbore tubing, a complete sanitary fluid system can be designed. Ideal for laboratory and R&D applications. Available sizes: 3 mm, 6 mm, 10 mm, and 12 mm I.D. Micro tubing fabrication equipment (described at right) makes customizing your configuration straightforward and easy.

Parts available include:
- Straight Ferrules
- 45°, 90°, 180° bends
- Cross Tees
- Gaskets
- Reducing Ferrules
- Micro Tees
- End Caps
- Diaphragm Valves

Fabrication Equipment for Micro Tubing

Sani-Tech® Bender System
Form 45°, 90° and 180° bends with this system. For use with Sani-Pro® T (polypropylene) and Sani-Pro® K (PVDF) in sizes from 3 to 14.2 mm diameter.

Sani-Tech® Fusion 5 System
This system is used to fuse sanitary connections onto Sani-Tech® micro tubing. For use with Sani-Pro® T (polypropylene) and Sani-Pro® K (PVDF) tubing in sizes from 3 to 14.2 mm.

Sani-Tech® can create a custom design to your specifications with our extensive custom fabrication capabilities. Our experience in engineered plastics, combined with our machining, welding, molding and bending capabilities, enables us to design and manufacture virtually any type of custom product.

Fabrication specialists can assemble standard parts to your configuration or start from raw materials to create a completely new design for your unique application. Sanitary connections can be used with high-purity plastics to make any variety of parts or assemblies. If the standard products in this catalog do not meet your needs, please call us to discuss your custom design.

Some custom parts include:
- Manifolds
- Vessels
- Fitting and pipe assemblies
- Adapters
- Tank caps
- Custom drops
- Filter housings

Materials:
- Polypropylene
- PVDF
- PVC
- Polysulfone
- HDPE
- Halar (ECTFE)
- Polycarbonate
Saint-Gobain Performance Plastics does not assume any responsibility or liability for any advice furnished by it, or for the performance or results of any installation or use of the product(s) or of any final product into which the product(s) may be incorporated by the purchaser and/or user. The purchaser and/or user should perform its own tests to determine the suitability and fitness of the product(s) for the particular purpose desired in any given situation.

NOTE: Saint-Gobain Performance Plastics Corporation does not assume any responsibility or liability for any advice furnished by it, or for the performance or results of any installation or use of the product(s) or of any final product into which the product(s) may be incorporated by the purchaser and/or user. The purchaser and/or user should perform its own tests to determine the suitability and fitness of the product(s) for the particular purpose desired in any given situation.

Sani-Tech, Sani-Pro and S.I.B. are registered trademarks of Saint-Gobain Performance Plastics. Kynar is a registered trademark of Atofina Chemicals. Viton is a registered trademark of DuPont Dow Elastomers. Teflon is a registered trademark of E.I. du Pont de Nemours and Company.

Limited Warranty: For a period of 6 months from the date of first sale, Saint-Gobain Performance Plastics Corporation warrants this product(s) to be free from defects in manufacturing. Our only obligation will be to provide replacement product for any portion proving defective, or at our option, to refund the purchase price thereof. User assumes all other risks, if any, including the risk of injury, loss or damage, whether direct or consequential, arising out of the use, misuse, or inability to use this product(s). SAINT-GOBAIN PERFORMANCE PLASTICS DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.