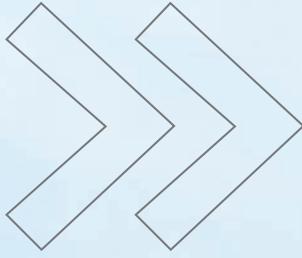


The image features a collection of white plastic piping and components against a blue background. At the top, several long sections of pipe are shown, with the 'santech' logo and 'sani-pro' branding printed on them. In the center, a large blue-handled valve with 'santech' written on its side is prominent. Below it, various fittings, elbows, and tees are scattered. On the right side, there is a collage of smaller images: a blue valve, a white fitting, a pressure gauge, and a control panel labeled 'sani-tech s.i.b. 2'.

Sani-Tech®

Sani-Pro®
High-Purity
Piping and
Components



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

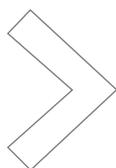
SIZE		SANI-PRO® T – POLYPROPYLENE		SANI-PRO® K – KYNAR® PVDF	
Inches	mm	Sanitary Ferrule (PSI)	S.I.B.® Fusion (PSI)	Sanitary Ferrule (PSI)	S.I.B.® Fusion (PSI)
3/4	14.2	150	150	230	230
1	21.7	125	150	150	230
1-1/2	34.4	125	150	150	230
2	47.1	125	125	150	230
2-1/2	59.8	50	75	125	150
3	72.5	50	75	75	150

TEMPERATURE CORRECTION FACTORS

°F	°C	Sani-Pro® T	Sani-Pro® K
100	38	.85	.90
125	52	.65	.80
175	80	NR	.60

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***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.



HIGH-PURITY NON-METALLIC SYSTEMS FOR CRITICAL APPLICATIONS

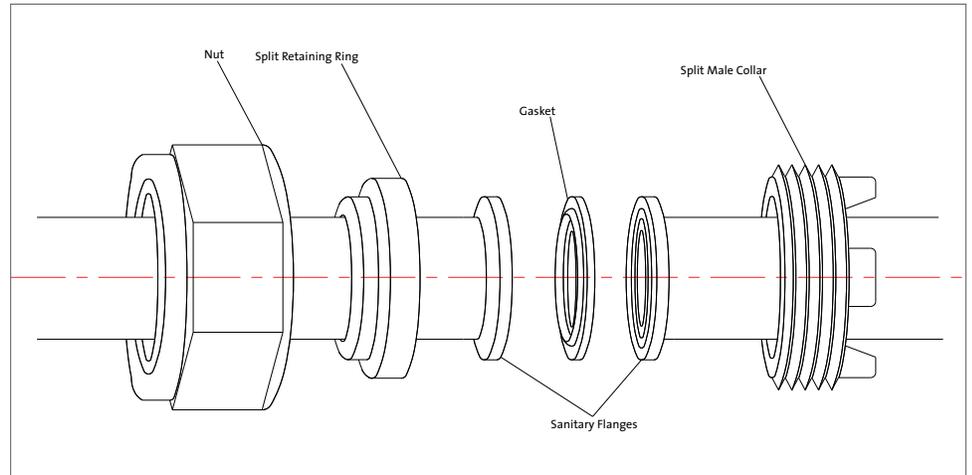
Sani-Tech® gives the research and development professional, system designer, process engineer and bio-engineer freedom of choice. We offer a complete line of sanitary processing systems and related components, including fabrication equipment for field installation as well as small-scale bench-top systems 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.

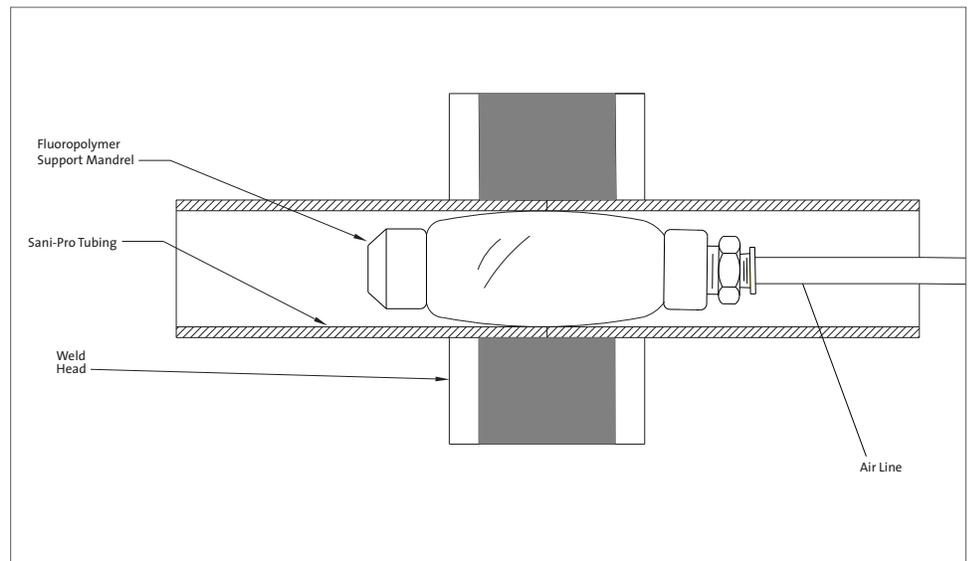
Most components are reusable and reconfigurable. Complete process control is gained through simplicity of design and consistency of contact surface, as well as uniformity of flow criteria within all flexible and rigid products.

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.

SANITARY NON-METALLIC JOINING TECHNOLOGY — THE SANI-TECH® SYSTEMS ADVANTAGE



Sanitary ferrule, gasket and true union assembly



S.I.B.® (Smooth Inner Bore) fusion

FABRICATION EQUIPMENT

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



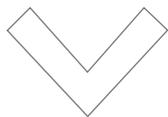
The Sani-Tech® S.I.B.® 2 fusion welding tool is a better way to install high-purity plastic piping systems. S.I.B.® technology creates a smooth interior surface at the tubing weld, eliminating all beads, crevices, and intrusions into the fluid stream. The smooth surface reduces the areas for contaminants 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

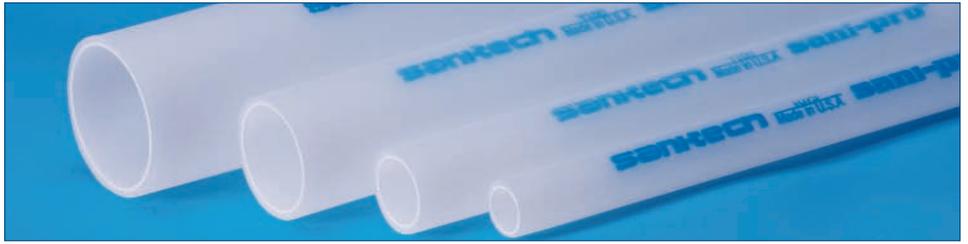
- Pharmaceutical
- Biotechnology
- DI water systems
- Semiconductor
- Food/beverage
- USP water systems
- WFI water systems



TUBING AND FITTINGS

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.

ELBOWS



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

SANITARY REDUCERS



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

END CAPS



Solid and tapped styles available. Your choice of tap size.

SANITARY TRUE UNION CLAMPS



Standard, heavy-duty and ultra heavy-duty styles available.

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.



VALVES

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.



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 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 trunnion 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

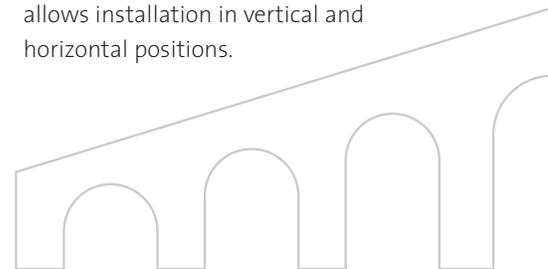
A very versatile and widely used valve for high-purity water and chemical transfer systems. This is a normally closed valve that will open when the manually adjustable set pressure is reached. This valve is used for the following applications: pressure relief valve, back pressure regulator, pressure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



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, pharma-

ceutical 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



SANITARY ADAPTERS

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:*



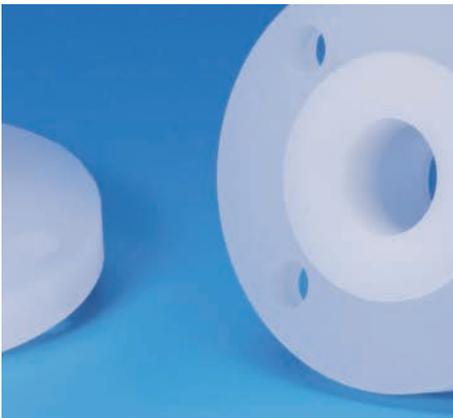
ANSI FLANGE ADAPTERS

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



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) micro bore 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.



CUSTOM HIGH-PURITY FABRICATIONS



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

Manufacturing Facilities

Saint-Gobain Performance Plastics
2664 Gilchrist Road
Akron, Ohio 44305
Tel: (800) 798-1554, (330) 798-9240
Fax: (330) 798-6968
*TYGON® Brand Flexible Tubing,
Chemfluor® Tubing*

Saint-Gobain Performance Plastics
P.O. Box 481, 3910 Industrial Drive
Beaverton, Michigan 48612
Tel: (888) 387-0067, (989) 435-9533
Fax: (989) 453-2355
*TYGON® Brand Extruded Silicone
and Molded Components*

Saint-Gobain Performance Plastics
460 Milltown Road
Bridgewater, New Jersey 08807
Tel: (800) 435-3992, (908) 218-8888
Fax: (908) 218-9009
*Flexible Components, ReSeal®,
Sani-Tech® Products*

Saint-Gobain Performance Plastics
I-295 @ Harmony Road
Mickleton, New Jersey 08056
Tel: (800) 543-8823, (856) 423-6630
Fax: (856) 423-8182
*Roll Cover, Engineered
Extrusions, Tanks*

Saint-Gobain Performance Plastics
150 Dey Road
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Fax: (973) 696-4056
Chemware®

Saint-Gobain Performance Plastics
700 Warner Blvd.
Taunton, Massachusetts 02780
Tel: (508) 823-7701
Fax: (508) 823-1438
*Specialty Extruded and
Molded Silicone Products*

Saint-Gobain Performance Plastics
La Mothe-aux-Aulnaies
F-89120 Charny France
Tel: (33) 3-86-63-78-78
Fax: (33) 3-86-63-77-77
Silicone Products, Hose Assemblies

Saint-Gobain Performance Plastics
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Poestenkill, New York 12140
Tel: (518) 283-5963
Fax: (518) 283-1418
Specialty Closures

Saint-Gobain Performance Plastics
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Portage, Wisconsin 53901
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Specialty Molded Silicone Components

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Teflon is a registered trademark of E.I. du Pont de Nemours and Company.

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