

The Next Generation

Sani-Tech® Ultra represents the next generation in ultra-pure platinum-cured silicone tubing. Quite simply, it's a better product. Features like ultra-low extractables and longer pump life were engineered into Ultra by the experienced materials scientists of Saint-Gobain Performance Plastics to meet the stringent requirements of the biopharmaceutical market.

Characteristics

Fluid integrity is vitally important in many biopharmaceutical applications. Sani-Tech® Ultra formulations are manufactured and packaged in a certified clean room from the finest grade of silicone materials, and ultra-low TOCs ensure that contamination by extractables is kept to an absolute minimum, and the formulation imparts no taste or odors. Saint-Gobain Performance Plastics' silicone tubing is known for its superior pump life — and Sani-Tech® Ultra is no exception.

Biocompatibility

They are fully characterized, validated and tested to a variety of specifications including USP Class VI, ISO 10993, and EP 3.1.9. All detailed testing protocols are available upon request.

BIOPHARMACEUTICAL PRODUCTS

The Next Generation in High Performance Platinum-Cured Silicone Tubing

Features/Benefits

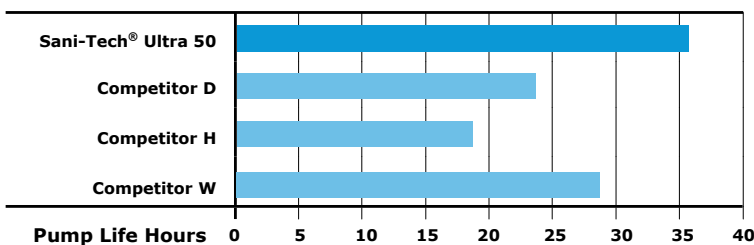
- Ultra-low extractables
- Excellent flexibility
- Laser etched for lot traceability
- Available in 50 and 65 durometers
- Superior pump life
- Fully autoclavable and sterilizable
- Non-yellowing formulation
- Imparts no taste or odors
- Temperature range from -80°F (-62°C) to 500°F (260°C)
- Meets all USP Class VI, EP 3.1.9, FDA, and ISO criteria

Typical Applications

- Sterile fill and transfers
- Drug delivery
- Cell harvest
- Media processing
- Sanitary peristaltic pump tubing
- Production filtration and fermentation

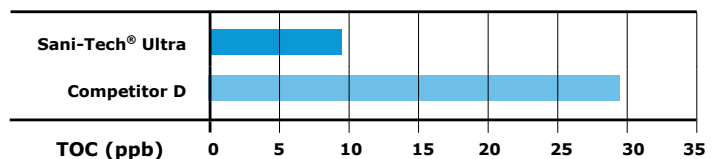
Comparative Peristaltic Pump Tubing Life

The table below depicts hours until failure of 1/4" ID x 3/8" OD tubing. In each case, a 3-roller pump head was utilized operating at 600 RPM at room temperature (73°F).



Comparative Extractables Concentrations

The table below illustrates the TOC concentrations of post autoclaved tubing samples. In each case the samples were subjected to a DI water flush and the effluent was analyzed.



Sani-Tech® Ultra Tubing Available Sizes

Part Number	ID Inches (mm)	OD Inches (mm)	Wall Inches	Part Number	ID Inches (mm)	OD Inches (mm)	Wall Inches	Part Number	ID Inches (mm)	OD Inches (mm)	Wall Inches
ULTRA-C-012-0	.012 (.30)	.024 (.61)	.006	ULTRA-C-156-1	5/32 (4.0)	7/32 (.5.5)	1/32	ULTRA-C-500-2	1/2 (12.7)	5/8 (15.9)	1/16
ULTRA-C-020-0	.020 (.51)	.036 (.91)	.008	ULTRA-C-156-2	5/32 (4.0)	9/32 (7.1)	1/16	ULTRA-C-500-3	1/2 (12.7)	11/16 (17.4)	3/32
ULTRA-C-025-0	.025 (.64)	.047 (1.2)	.011	ULTRA-C-156-3	5/32 (4.0)	11/32 (8.7)	3/32	ULTRA-C-500-4	1/2 (12.7)	3/4 (19.1)	1/8
ULTRA-C-030-0	.030 (.76)	.066 (1.7)	.018	ULTRA-C-156-4	5/32 (4.0)	13/32 (10.3)	1/8	ULTRA-C-500-5	1/2 (12.7)	7/8 (22.2)	3/16
ULTRA-C-030-2	.030 (.76)	.160 (4.1)	.062	ULTRA-C-156-5	5/32 (4.0)	17/32 (13.5)	3/16	ULTRA-C-500-6	1/2 (12.7)	1 (25.4)	1/4
ULTRA-C-040-0	.040 (1.0)	.086 (2.2)	.023	ULTRA-C-156-6	5/32 (4.0)	21/32 (16.7)	1/4	ULTRA-C-625-1	5/8 (15.9)	11/16 (17.4)	1/32
ULTRA-C-058-0	.058 (1.5)	.076 (1.9)	.009	ULTRA-C-187-1	3/16 (4.7)	1/4 (6.4)	1/32	ULTRA-C-625-2	5/8 (15.9)	3/4 (19.1)	1/16
ULTRA-C-062-1	1/16 (1.6)	1/8 (3.2)	1/32	ULTRA-C-187-2	3/16 (4.7)	5/16 (7.9)	1/16	ULTRA-C-625-3	5/8 (15.9)	13/16 (22.2)	3/32
ULTRA-C-062-2	1/16 (1.6)	3/16 (4.7)	1/16	ULTRA-C-187-3	3/16 (4.7)	3/8 (9.5)	3/32	ULTRA-C-625-4	5/8 (15.9)	7/8 (22.2)	1/8
ULTRA-C-062-3	1/16 (1.6)	1/4 (6.4)	3/32	ULTRA-C-187-4	3/16 (4.7)	7/16 (11.1)	1/8	ULTRA-C-625-5	5/8 (15.9)	1 (25.4)	3/16
ULTRA-C-062-4	1/16 (1.6)	5/16 (7.9)	1/8	ULTRA-C-187-5	3/16 (4.7)	9/16 (14.2)	3/16	ULTRA-C-625-6	5/8 (15.9)	1-1/8 (28.5)	1/4
ULTRA-C-062-5	1/16 (1.6)	7/16 (11.1)	3/16	ULTRA-C-187-6	3/16 (4.7)	11/16 (17.4)	1/4	ULTRA-C-750-1	3/4 (19.1)	13/16 (20.6)	1/32
ULTRA-C-062-6	1/16 (1.6)	9/16 (14.2)	1/4	ULTRA-C-250-1	1/4 (6.4)	5/16 (7.9)	1/32	ULTRA-C-750-2	3/4 (19.1)	7/8 (22.2)	1/16
ULTRA-C-078-1	5/64 (2.0)	9/64 (3.6)	1/32	ULTRA-C-250-2	1/4 (6.4)	3/8 (9.5)	1/16	ULTRA-C-750-3	3/4 (19.1)	15/16 (23.8)	3/32
ULTRA-C-078-2	5/64 (2.0)	13/64 (5.2)	1/16	ULTRA-C-250-3	1/4 (6.4)	7/16 (11.1)	3/32	ULTRA-C-750-4	3/4 (19.1)	1 (25.4)	1/8
ULTRA-C-078-3	5/64 (2.0)	17/64 (6.7)	3/32	ULTRA-C-250-4	1/4 (6.4)	1/2 (12.7)	1/8	ULTRA-C-750-5	3/4 (19.1)	1-1/8 (28.5)	3/16
ULTRA-C-078-4	5/64 (2.0)	21/64 (8.3)	1/8	ULTRA-C-250-5	1/4 (6.4)	5/8 (15.8)	3/16	ULTRA-C-750-6	3/4 (19.1)	1-1/4 (31.7)	1/4
ULTRA-C-078-5	5/64 (2.0)	29/64 (11.5)	3/16	ULTRA-C-250-6	1/4 (6.4)	3/4 (19.0)	1/4	ULTRA-C-875-1	7/8 (22.2)	15/16 (23.8)	1/32
ULTRA-C-078-6	5/64 (2.0)	37/64 (14.7)	1/4	ULTRA-C-312-1	5/16 (7.9)	3/8 (9.5)	1/32	ULTRA-C-875-2	7/8 (22.2)	1 (25.4)	1/16
ULTRA-C-093-1	3/32 (2.4)	5/32 (4.0)	1/32	ULTRA-C-312-2	5/16 (7.9)	7/16 (11.1)	1/16	ULTRA-C-875-3	7/8 (22.2)	1-1/16 (26.9)	3/32
ULTRA-C-093-2	3/32 (2.4)	7/32 (5.5)	1/16	ULTRA-C-312-3	5/16 (7.9)	1/2 (12.7)	3/32	ULTRA-C-875-4	7/8 (22.2)	1-1/8 (28.5)	1/8
ULTRA-C-093-3	3/32 (2.4)	9/32 (7.1)	3/32	ULTRA-C-312-4	5/16 (7.9)	9/16 (14.3)	1/8	ULTRA-C-875-5	7/8 (22.2)	1-1/4 (31.7)	3/16
ULTRA-C-093-4	3/32 (2.4)	11/32 (8.7)	1/8	ULTRA-C-312-5	5/16 (7.9)	11/16 (17.4)	3/16	ULTRA-C-875-6	7/8 (22.2)	1-3/8 (34.9)	1/4
ULTRA-C-093-5	3/32 (2.4)	15/32 (11.9)	3/16	ULTRA-C-312-6	5/16 (7.9)	13/16 (20.6)	1/4	ULTRA-C-1000-1	1 (25.4)	1-1/16 (26.9)	1/32
ULTRA-C-093-6	3/32 (2.4)	19/32 (15.1)	1/4	ULTRA-C-375-1	3/8 (9.5)	7/16 (11.1)	1/32	ULTRA-C-1000-2	1 (25.4)	1-1/8 (28.5)	1/16
ULTRA-C-125-1	1/8 (3.2)	3/16 (4.7)	1/32	ULTRA-C-375-2	3/8 (9.5)	1/2 (12.7)	1/16	ULTRA-C-1000-3	1 (25.4)	1-3/16 (30.1)	3/32
ULTRA-C-125-2	1/8 (3.2)	1/4 (6.4)	1/16	ULTRA-C-375-3	3/8 (9.5)	9/16 (14.3)	3/32	ULTRA-C-1000-4	1 (25.4)	1-1/4 (31.7)	1/8
ULTRA-C-125-3	1/8 (3.2)	5/16 (7.9)	3/32	ULTRA-C-375-4	3/8 (9.5)	5/8 (15.9)	1/8	ULTRA-C-1000-5	1 (25.4)	1-3/8 (34.9)	3/16
ULTRA-C-125-4	1/8 (3.2)	3/8 (9.5)	1/8	ULTRA-C-375-5	3/8 (9.5)	3/4 (19.0)	3/16	ULTRA-C-1000-6	1 (25.4)	1-1/2 (38.1)	1/4
ULTRA-C-125-5	1/8 (3.2)	1/2 (12.7)	3/16	ULTRA-C-375-6	3/8 (9.5)	7/8 (22.2)	1/4				
ULTRA-C-125-6	1/8 (3.2)	5/8 (15.8)	1/4	ULTRA-C-500-1	1/2 (12.7)	9/16 (14.3)	1/32				

Typical Physical Properties

Property	ASTM Method	Ultra 50 Value or Rating (metric)	Ultra 65 Value or Rating (metric)
Durometer Hardness Shore A, 15 Sec	D2240	50	65
Tensile Strength psi (MPa)	D412	1293 (8.91 MPa)	1373 (9.47 MPa)
Ultimate Elongation, 100%	D412	719	608
Tear Resistance ppi (kN/m)	D624	185 (50.1 Kn/M)	179 (50.1 Kn/M)
Specific Gravity	D792	1.14	1.17
Tensile Modulus, at 200% elongation psi (MPa)	D412	200 (1.38 MPa)	302 (2.08 MPa)

Unless otherwise noted, all tests were conducted at room temperature (73°F). Values shown were determined on 0.075" thick extruded strip or 0.075" thick molded ASTM plaques or molded ASTM durometer buttons.

Sani-Tech® Ultra Options

- Custom laylines
- Gamma irradiated
- Bulk spool packaging
- Custom sizes available
- Available in custom lengths and durometers

Sterilization Methods

- Autoclavable
- Radiation – up to 5.0 Mrad (50 Kilogray)
- Gas – ethylene oxide

Sani-Tech® is a registered trademark of Saint-Gobain Performance Plastics.