

Cole-Parmer® Thermoplastic Elastomer (TPE) Tubing

Thermoplastic Elastomer Tubing

Designed for use with peristaltic pumps, this soft and flexible, yet durable, tubing provides long service life.

Tubing does not contain PVC, DEHP, phthalates, or plasticizers, making it ideal for various pharmaceutical, medical, food, and beverage applications.

Materials

Thermoplastic Elastomer (TPE)

- Excellent chemical resistance

TPE compounds based on SBS and/or SEBS exhibit excellent resistance to water and various solutions. However, some degradation in the compounds can be seen at long-term exposure to organic solvents, oils, and fuels.



CERTIFICATION

USP Class VI, USP 661, and RoHS compliant

APPLICATIONS

- General-purpose, laboratory, and single-use applications
- Excellent for use in peristaltic pump applications

FEATURES/BENEFITS

- Free technical application support available to assist with tubing selection
- Great alternative to silicone tubing
- Ultra-low extractables and leachables
- Low gas and oxygen permeability
- Low protein binding and nonpyrogenic material
- Thermally weldable
- Wide temperature range of -80 to 135 °C (-112 to 275 °F)
- Flexible tubing with a 68 Shore A durometer
- Tubing can be sterilized via autoclave, ethylene oxide, and gamma irradiation

USA	+1.800.323.4340
	+1.847.549.7600
Canada	+1.800.363.5900
China	86.21.5109.9909
India	+1.800.266.1244

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	+49 (0) 937.792030*
Italy	+39.02.84349215
All others	+1.847.549.7600

Cole-Parmer®
coleparmer.com

*Inquiries from Germany and France are now handled in our St. Neots office by native-speaking experts.

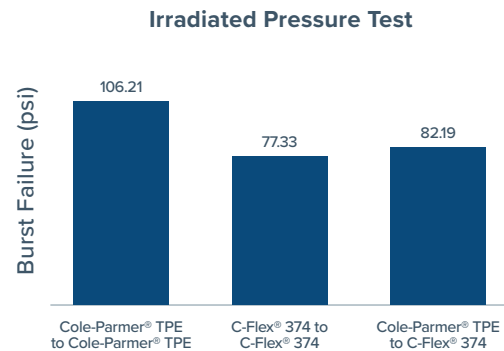
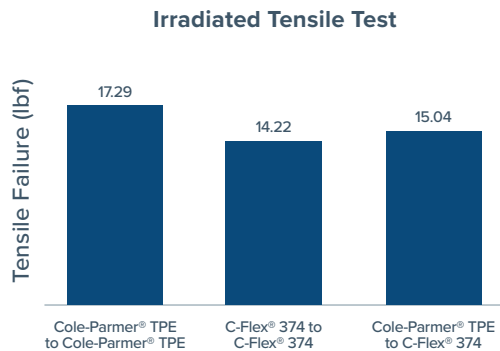
Specification and Ordering Table

Dimensions: in. (mm)			Item Number	Reel Length (ft)
Tubing ID	Tubing OD	Wall Thickness		
1/32" (0.8)	3/32" (2.4)	1/32" (0.8)	50115-95	50
1/16" (1.6)	1/8" (3.2)	1/32" (0.8)	50115-99	50
1/16" (1.6)	3/16" (4.8)	1/16" (1.6)	50115-02	50
1/8" (3.2)	3/16" (4.8)	1/32" (0.8)	50116-04	50
1/8" (3.2)	1/4" (6.4)	1/16" (1.6)	50116-05	50
3/16" (4.8)	1/4" (6.4)	1/32" (0.8)	50116-06	50
3/16" (4.8)	5/16" (8)	1/16" (1.6)	50116-07	50
1/4" (6.4)	3/8" (9.5)	1/16" (1.6)	50116-10	50
1/4" (6.4)	7/16" (11)	3/32" (2.4)	50116-11	50
5/16" (8)	7/16" (11)	1/16" (1.6)	50116-13	50
3/8" (9.5)	1/2" (12.7)	1/16" (1.6)	50116-16	50
3/8" (9.5)	9/16" (14.3)	3/32" (2.4)	50116-17	50
3/8" (9.5)	5/8" (15.9)	1/8" (3.2)	50116-15	50
1/2" (12.7)	3/4" (19.1)	1/8" (3.2)	50116-18	50

Weld Burst and Tensile Testing Results Gamma Irradiated

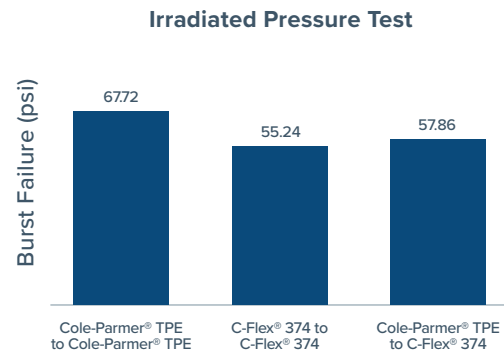
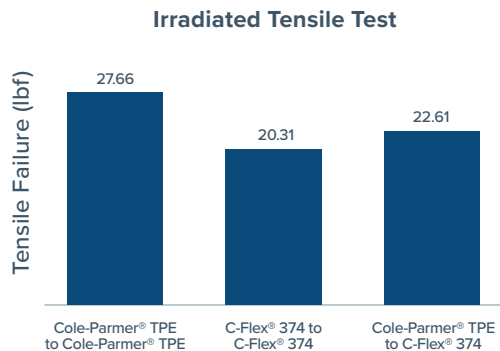
Gamma Irradiated Tube Weld Test Data (0.125 ID by 0.250 OD Tubing) – Sartorius Biowelder®

Tube	Samples Tested	Average Tensile Failure (lbf)	Average Burst Pressure (psi)
Cole-Parmer® TPE to Cole-Parmer® TPE	10	17.29	106.21
C-Flex® 374 to C-Flex® 374	10	14.22	77.33
Cole-Parmer® TPE to C-Flex® 374	10	15.04	82.19



Gamma Irradiated Tube Weld Test Data (0.250 ID by 0.375 OD Tubing) – Sartorius Biowelder®

Tube	Samples Tested	Average Tensile Failure (lbf)	Average Burst Pressure (psi)
Cole-Parmer® TPE to Cole-Parmer® TPE	10	27.66	67.72
C-Flex® 374 to C-Flex® 374	10	20.31	55.34
Cole-Parmer® TPE to C-Flex® 374	10	22.61	57.86



Weld Burst and Tensile Testing Results Gamma Irradiated (continued)

Test Procedure

Gamma Irradiation

All tubes were dosed between 25 kGy and 50 kGy.

Welding Procedure

All tubes were welded in a Sartorius welder with standard settings. Cole-Parmer® TPE did not have a setting, so the C-Flex® 374 setting was used. Tensile samples were created with a first-use blade, and pressure samples with a second-use blade. Samples for tensile and pressure testing were made to be 4 inches and 6 inches long, respectively.

Tensile Test Procedure

All samples were pulled in a Mark-10 test stand at 20 inches per minute until failure occurred. The failure mode and force at which a failure occurred were recorded.

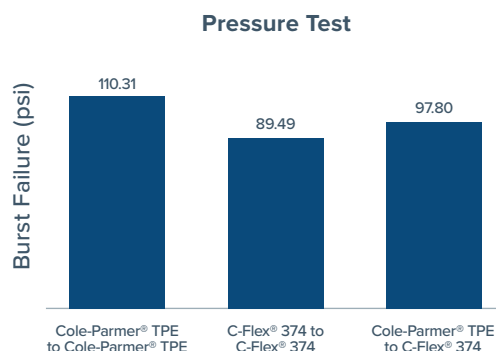
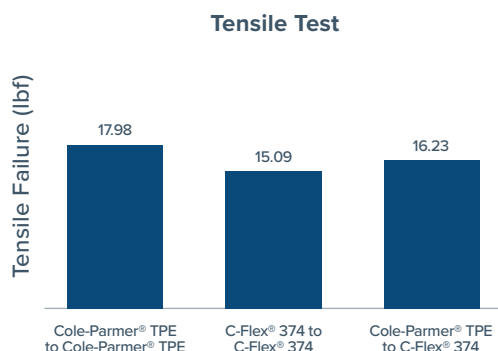
Pressure Test Procedure

All tubes were tested with a closed-loop hydrostatic testing system on barbed fittings, secured with nylon Handy Clamps. Tubes were bled of all air to maintain consistent accurate results. Pressure was slowly increased until failure was observed. Failure mode and maximum pressure were recorded.

Weld Burst and Tensile Testing Results Nonirradiated

Tube Weld Test Data (0.125 ID by 0.250 OD Tubing) – Sartorius Biowelder®

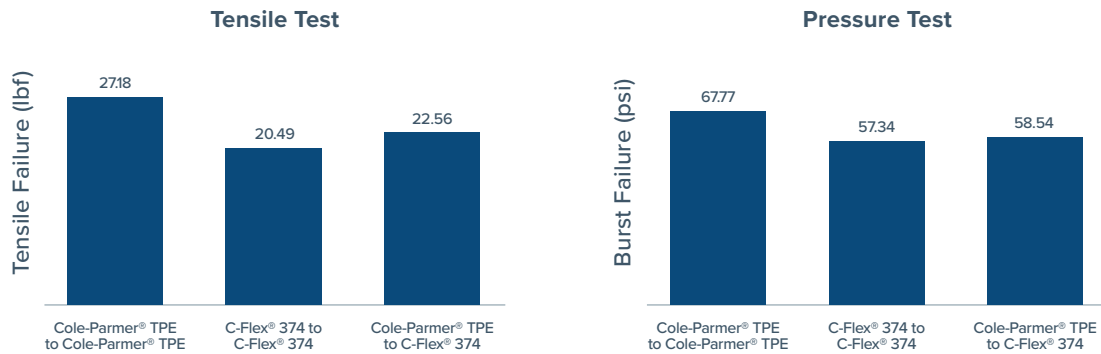
Tube	Samples Tested	Average Tensile Failure (lbf)	Average Burst Pressure (psi)
Cole-Parmer® TPE to Cole-Parmer® TPE	6	17.98	110.31
C-Flex® 374 to C-Flex® 374	6	15.09	89.49
Cole-Parmer® TPE to C-Flex® 374	6	16.23	97.80



Weld Burst and Tensile Testing Results Nonirradiated (continued)

Tube Weld Test Data (0.250 ID by 0.375 OD Tubing) – Sartorius Biowelder®

Tube	Samples Tested	Average Tensile Failure (lbf)	Average Burst Pressure (psi)
Cole-Parmer® TPE to Cole-Parmer® TPE	6	27.18	67.77
C-Flex® 374 to C-Flex® 374	6	20.49	57.34
Cole-Parmer® TPE to C-Flex® 374	6	22.56	58.54



Test Procedure

Welding Procedure

All tubes were welded in a Sartorius welder with standard settings. Cole-Parmer® TPE did not have a setting optimized for it, so the C-Flex® 374 setting was used. Tensile samples were created with a first-use blade, and pressure samples with a second-use blade. Samples for tensile and pressure testing were made to be 4 inches and 6 inches long, respectively.

Tensile Test Procedure

All samples were pulled in a Mark-10 test stand at 20 inches per minute until failure occurred. The failure mode and force at which a failure occurred were recorded.

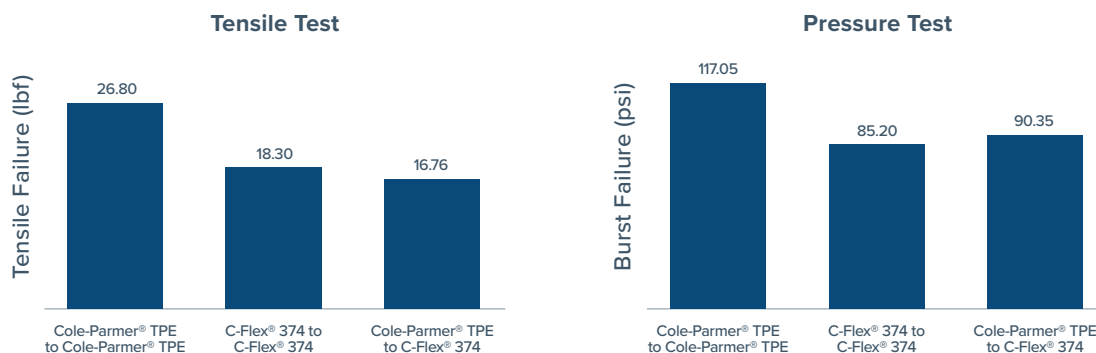
Pressure Test Procedure

All tubes were tested with a closed-loop hydrostatic testing system on barbed fittings, secured with nylon Handy Clamps. Tubes were bled of all air to maintain consistent accurate results. Pressure was slowly increased until failure was observed. Failure mode and maximum pressure were recorded.

Weld Burst and Tensile Testing Results Nonirradiated (continued)

Tube Weld Test Data (0.125 ID by 0.250 OD Tubing) – Terumo SCD-IIB Welder®

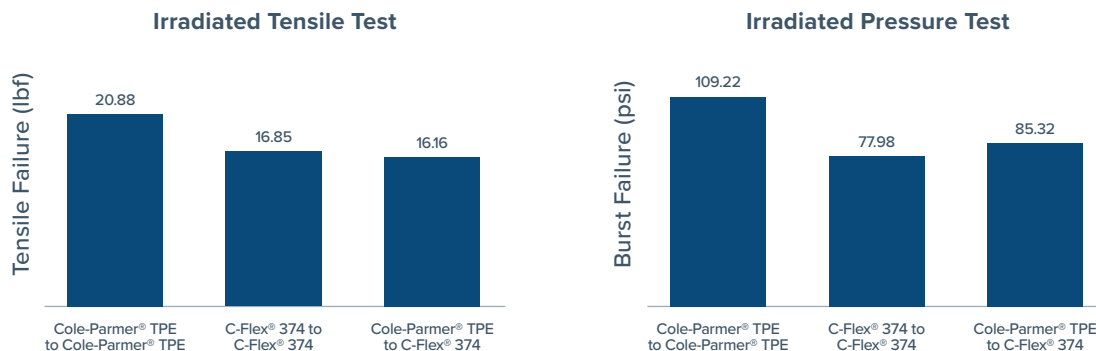
Tube	Samples Tested	Average Tensile Failure (lbf)	Average Burst Pressure (psi)
Cole-Parmer® TPE to Cole-Parmer® TPE	10	26.80	117.05
C-Flex® 374 to C-Flex® 374	10	18.30	85.20
Cole-Parmer® TPE to C-Flex® 374	10	16.76	90.35



Weld Burst and Tensile Testing Results Gamma Irradiated

Tube Weld Test Data (0.250 ID by 0.375 OD Tubing) – Terumo SCD-IIB Welder®

Tube	Samples Tested	Average Tensile Failure (lbf)	Average Burst Pressure (psi)
Cole-Parmer® TPE to Cole-Parmer® TPE	10	20.88	109.22
C-Flex® 374 to C-Flex® 374	10	16.85	77.98
Cole-Parmer® TPE to C-Flex® 374	10	16.16	85.32



Weld Burst and Tensile Testing Results Gamma Irradiated (continued)

Test Procedure

All tubes were dosed between 25 kGy and 50 kGy.

Welding Procedure

All tubes were welded using a Terumo SCD-IIB with standard settings. Samples for tensile and pressure testing were made to be 4 inches and 6 inches long, respectively.

Tensile Test Procedure

All samples were pulled in a Mark-10 test stand at 20 inches per minute until failure occurred. The failure mode and force at which a failure occurred were recorded.

Pressure Test Procedure

All tubes were tested with a closed-loop hydrostatic testing system on barbed fittings, secured with nylon Handy Clamps. Tubes were bled of all air to maintain consistent accurate results. Pressure was slowly increased until failure was observed. Failure mode and maximum pressure were recorded.