Saint-Gobain
Life Sciences –
Bioprocess Solutions

C-Flex® TPE Braided Tubing

for Biopharmaceutical Applications

C-Flex® TPE Braided tubing for high pressure application

C-Flex® Braided tubing is specifically designed to meet the critical demands of high pressure fluid processing applications in pharmaceutical and biopharmaceutical for fluid process.

The Material Difference

C-Flex® Braided is produced using the C-Flex® 082 translucent ADCF (Animal Derived Component Free) material formulation, a TPE material commonly approved for use in many biopharmaceutical applications. Reinforcement is provided by a polyester fiber that provides increased pressure rating and improved bend radius. It is compatible with steam sterilization and gamma-irradiation. C-Flex® Braided tubing is part of a family of TPE tubing offering the widest range of formulations and sizes in the industry including C-Flex® 082 and 374 translucent tubing for fluid flow visibility, and C-Flex® 072 opaque for peristaltic pump applications and transfer of light sensitive fluids.

Biocompatible

C-Flex® Braided tubing is manufactured from C-Flex 082 thermoplastic materials and tested to a variety of specifications including:

USP Class VI	ISO 10993-5 (Cytotoxicity, In-Vitro)
ISO 10993-3 (Ames Genotoxicity)	ISO 10993-11 (Systemic Toxicity, In-Vivo)
ISO 10993-4 (Hemolysis, Indirect)	European Pharmacopeia 3.2.9

For additional test data visit www.biopharm.saint-gobain.com to download the Validation Guide and the Regulatory Information Overview (RIO) or contact your customer service department.

Features / Benefits

- Up to five times higher burst pressures compared to non-braided materials.
- A product validation test summary is available.
- Compatible with overmolding technology for single-use systems
- Ultra-flexible, improved bend radius over non-reinforced tubing
- Compatible with autoclave and gamma irradiation
- Temperature range -67°C to 135°C (-85°F to 275°F)
- Available in 15 and 25 foot lengths, custom lengths available upon request

Typical Applications

- Vessel and tank transfers with elevated pressure requirements
- High pressure tests such as Filter Integrity Testing
- Fluid transfer applications needing crush or kink-resistance

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Selection guide of C-Flex® Braided tubing

Part Numbers	I.D. inch (mm)	OD inch (mm)	Wall inch (mm)	Length feet (m)	Minimum bend radius inch (mm)	Maximum working pressure at 68°F 20°C psi* (bar)
CFB-082-125-2	0.125 (3.8)	0.355 (9.02)	0.115 (2.92)	25 (7.6 m)	0.5 (12.7)	105 (7.2)
CFB-082-250-4	0.250 (6.35)	0.500 (12.70)	0.125 (3.18)	25 (7.6 m)	1.5 (38.1)	110 (7.6)
CFB-082-375-4	0.375 (9.53)	0.625 (15.88)	0.125 (3.18)	25 (7.6 m)	2.5 (63.5)	80 (5.5)
CFB-082-500-4	0.500 (12.70)	0.750 (19.05)	0.125 (3.18)	15 (4.6 m)	3.5 (88.9)	105 (7.2)
CFB-082-625-6	0.625 (15.88)	1.000 (25.40)	0.187 (4.75)	15 (4.6 m)	4 (101.6)	110 (7.6)
CFB-082-750-6	0.750 (19.05)	1.125 (28.58)	0.187 (4.75)	15 (4.6 m)	5.5 (139.7)	110 (7.6)

Working pressure is determined using a 4:1 safety factor of the maximum burst pressure per ASTM D1599

Typical Physical Properties of C-Flex® 082

Property	ASTM Method	Value or Rating
Appearance	–	Translucent
Durometer, Shore A	D2240	60
Tensile Strength, psi (bar)	D412	1106 (76.3)
Elongation, at Break %	D412	874
Tensile Modulus, @ 100%/300%, psi (bar)	D412	256/400 (17.7/27.6)
Tensile Set @ 300% Stretch,%	D412	29
Compression Set Constant Defl., "B" (22hrs @ 70°C), %	D395	89
Brittle Point, °C (°F)	D746	-67 (-85)
Low Temperature Flexibility @ -65°C	D380	Pass

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

Chemical Resistance	
Acids, Dilute/Weak	Acceptable
Acids, Strong/Concentrated	Acceptable
Bases, Dilute/Weak	Acceptable
Bases, Strong/Concentrated	Acceptable
Salts	Acceptable
High-purity Water	Acceptable
Alcohol	Not recommended
Oil/Water Emulsion	Test before using
Organic Solvent	Not recommended

NOTE: It is the users responsibility to insure the suitability and safety of C-Flex® for all intended uses/applications.

Sterilization Methods

Autoclavable	one time 30 minute cycle at 121°C
Gamma Irradiation	one time up to 40kGy

Characteristics

The manufacturing process is carefully controlled from raw material compounding through finished production. Inspection and lot traceability information is readily accessible as batch numbers are assigned. All packages are identified by external labeling on both the bag and the crush-proof box.

Saint-Gobain Life Sciences manufacturing facilities have the ability to create a variety of sizes or coil lengths for your particular application needs. Contact us for a quote to meet your specific requirements.

C-Flex®, BarbLock® and Pure-Fit® are registered trademarks.

Contact us today for:
Consultations • Samples • Quotes • Orders • Technical Service

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IMPORTANT: It is the user's responsibility to ensure the suitability and safety of Saint-Gobain Life Sciences products for all intended uses and that the materials to be used comply with all applicable medical regulatory requirements. Saint-Gobain Life Sciences assumes no responsibility for any product failures that occur due to misuse of the materials it provides arising out of the design, fabrication or application of the products into which the materials are incorporated.

WARRANTY: For a period of 12 months from the date of first sale, Saint-Gobain Life Sciences warrants this product to be free of defects in materials and workmanship. Our only obligation will be to replace any portion proving defective, or at our option, to refund the purchase price there of.

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