



# Biopharmaceutical Products

C-FLEX® TUBING

C-FLEX® MOLDED ASSEMBLIES

C'EAL-FLEX™ TUBING SEALER

For more than four decades, Saint-Gobain Performance Plastics and its family of companies have supplied the world with innovative, high-performance polymer products for the most demanding applications. Our tradition of excellence goes back more than 300 years through our parent company, Compagnie de Saint-Gobain, one of the world's top 100 industrial corporations, with operations in more than 40 countries. This successful corporation has been built with the single purpose of serving the customer and a commitment to quality and leadership in each of the industries served.



## BIOPHARMACEUTICAL PRODUCTS MANUFACTURING FACILITIES

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*Consult a Saint-Gobain Performance Plastics Sales Representative for the product and material formulation that best suits your specific application needs.*

[WWW.BIOPHARM.SAINT-GOBAIN.COM](http://WWW.BIOPHARM.SAINT-GOBAIN.COM)

*C'eal-Flex™ is a trademark.  
C-Flex® is a registered trademark.*

**WARNING:** The content of Saint-Gobain tubing materials is not certified by the FDA for implant devices and is neither designed nor intended to be used in medical applications involving permanent implantation in the human body or permanent contact with body fluids or tissues. Failure to comply with this warning may lead to serious bodily injury or death.

**IMPORTANT:** It is the user's responsibility to ensure the suitability and safety of Saint-Gobain Performance Plastics materials for all intended uses. Laboratory, field or clinical tests must be conducted in accordance with applicable requirements in order to determine the safety and effectiveness for use of materials in any particular application. If intended for medical use, it is the user's responsibility to ensure that the materials to be used comply with all applicable medical regulatory requirements.

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## TUBING FOR BIOPHARMACEUTICAL APPLICATIONS

### The Material Difference

C-Flex® is a unique, patented thermoplastic elastomer specifically designed to meet the critical demands of the medical, pharmaceutical, research, biotech and diagnostics industries.

C-Flex biopharmaceutical tubing has been used by many of the world's leading biotech and pharmaceutical processing companies for over 20 years. Each coil of C-Flex tubing is extruded to precise ID, OD and wall dimensions in an FDA-registered medical device facility in accordance with the regulations governing this registration. All tubing is formulated to meet the standards of the biopharmaceutical industry and is QA tested before leaving the Saint-Gobain Performance Plastics production facility.

### Physical Properties

| Formulation   | 374     | 072     | 082     |
|---|---------|---------|---------|
| Durometer, Shore A (5 SEC. ASTM D2240)                  | 60      | 60      | 60      |
| Appearance  | Clear   | Opaque  | Clear   |
| Tensile Strength, psi (ASTM D412)                       | 1190    | 1462    | 1190    |
| Elongation, % (ASTM D412)                               | 708     | 679     | 708     |
| Tensile Modulus, @100%/300%, psi (ASTM D412)            | 230/380 | 240/360 | 230/380 |
| Tensile Set, % at break                                 | 92      | 75      | 92      |
| Tear Resistance, lb/in., Die C/Die B                    | 175/130 | 180/135 | 175/130 |
| Compression Set Constant Defl., "B" (22 hrs. @ 70°C), % | 57      | 60      | 57      |
| Abrasion Resistance, mg. lost/1000 cycles               | 9.0     | 5.7     | 9.0     |
| Specific Gravity (ASTM D792)                            | 0.90    | 0.90    | 0.90    |
| Water Absorption, % at 100% RH (ASTM D570)              | 0.2     | 0.2     | 0.2     |
| Brittle Point, °F (ASTM D746)                           | -88     | -100    | -88     |

### Features

- Complies with USP 24/NF19, Class VI, FDA and USDA standards
- Manufactured under strict GMPs in an FDA-registered facility
- Non-pyrogenic, non-cytotoxic, non-hemolytic
- Chemically resistant to concentrated acids and alkalis
- Significantly less permeable than silicone
- Low platelet adhesion
- Low protein binding
- Ultra-smooth inner bore
- Available in clear or opaque formulations
- Lot traceable
- Safer disposal through incineration

### Benefits

- Superior to PVC and silicone for many applications
- Longer peristaltic pump life
- Significantly fewer TOC extractables than PVC
- Heat-sealable, bondable and formable
- Remains flexible from -50°F to 275°F
- Moderate cost compared to other tubing products
- Sterilizable by radiation, ETO, autoclave or chemicals
- Available in animal-free formulations (ADCF)
- Meets FDA requirements for direct food contact

### Applications

- Cell culture media
- Cell fermentation
- Diagnostic equipment
- Pharmaceutical production
- Vaccine production
- Pinch valves
- Laboratory research
- High-purity water
- Reagent dispensing
- Medical fluid/drug delivery
- Dialysis, cardiac bypass
- Botanical product production
- Peristaltic pump segments
- Sterile filling and dispensing systems



## C-Flex® Biopharmaceutical Tubing Product Selection Guide

### Chemical Compatibility

- Acids, dilute/weak – acceptable
- Acids, strong/concentrated – acceptable
- Bases, dilute/weak – acceptable
- Bases, strong/concentrated – acceptable
- Salts – acceptable
- Alcohols – not recommended
- Milk products (<4% fat) – acceptable
- Organic solvents – not recommended
- Oil/Water emulsions – test

### Product Profile

C-Flex® biopharmaceutical tubing is part of a family of C-Flex products that includes micro-bore tubing, tight tolerance pump tubing, medical-grade tubing, commercial-grade tubing and custom tubing formulations from 50A to 80A Durometer. An extensive database of C-Flex bio-compatibility data is available to assist in the validation of C-Flex for your application. Contact Saint-Gobain Performance Plastics at (800) 541-6880 and ask for the Regulatory Affairs Department to request access to this data and the FDA Master Files.

| CPT Tubing Catalog # (1)   | Packaging Options (2) | ID x OD x Wall (in decimals)                               | ID x OD (in fractions) |
|--|-----------------------|--|------------------------|
| xxx-125-2  | C50, S                | .125 x .250 x .062   | 1/8 x 1/4              |
| xxx-188-2  | C50, S                | .188 x .313 x .062   | 3/16 x 5/16            |
| xxx-188-3  | C50, S                | .188 x .375 x .094   | 3/16 x 3/8             |
| xxx-250-2  | C50, S                | .250 x .375 x .062   | 1/4 x 3/8              |
| xxx-250-3  | C50, S                | .250 x .438 x .094   | 1/4 x 7/16             |
| xxx-250-4  | C50, S                | .250 x .500 x .125   | 1/4 x 1/2              |
| xxx-313-3  | C50, S                | .313 x .500 x .093   | 5/16 x 1/2             |
| xxx-375-2  | C50, S                | .375 x .500 x .062   | 3/8 x 1/2              |
| xxx-375-3  | C50, S                | .375 x .563 x .094   | 3/8 x 9/16             |
| xxx-375-4  | C50, S                | .375 x .625 x .125   | 3/8 x 5/8              |
| xxx-500-3  | C50, S                | .500 x .688 x .094   | 1/2 x 5/8              |
| xxx-500-4  | C50, S                | .500 x .750 x .125   | 1/2 x 3/4              |
| xxx-625-4  | C50                   | .625 x .875 x .125   | 5/8 x 7/8              |
| xxx-750-4  | C15                   | .750 x 1.00 x .125   | 3/4 x 1                |
| xxx-750-6  | C15                   | .750 x 1.125 x .188  | 3/4 x 1-1/8            |
| xxx-750-8  | C15                   | .750 x 1.250 x .250  | 3/4 x 1-1/4            |
| xxx-1000-6   | C15                   | 1.00 x 1.375 x .188  | 1 x 1-3/8              |
| xxx-1000-8   | C15                   | 1.00 x 1.500 x .250  | 1 x 1-1/2              |
| <b>(1) FORMULAS: (xxx)</b>   |                       | <b>(2) PACKAGING OPTIONS</b>                               |                        |
| 082 – Clear, 60A Durometer   |                       | C50 – 50' Coils  |                        |
| 374 - Clear, 60A Durometer ADCF  |                       | C15 – 15' Coils  |                        |
| 072 – Opaque, 60A Durometer  |                       | S - Bulk spools are available for OEM product applications |                        |
| C-Flex is available through Authorized Distributors ONLY. Contact the Customer Service Department at <b>(800) 541-6880</b> for the name of the authorized C-Flex distributor in your area. |                       |  |                        |

## C'eal-Flex™ – TPE Ultra Sealer



### SYSTEM DESCRIPTION

The **C'eal-Flex™** TPE Ultra Sealer measures 7" x 9" x 4" (18 x 25 x 10 cm), weighs 6.5 lbs and operates from regular 110-volt current and filtered air. It offers simple one-button operation and computer-controlled, adjustable sealing temperature and dwell times. The unit is easy to clean, portable and compact. One of the Remote Sealing Heads with 10-ft cable is required.

### SYSTEM PRICING

| Product  | Catalog Number |
|--|----------------|
| <b>C'eal-Flex Base Generator/Control Unit</b> 9" x 7" x 4" ..... Includes both electric and pneumatic connectors | 150-007-001    |
| <b>Thin Wall Remote Sealing Head</b> with 10-ft cable. .... Seals thin wall (.062) tubing: .125 OD - .375 OD.    | 150-009-001    |
| <b>Thick Wall Remote Sealing Head</b> with 10-ft cable. .... Seals thick wall (.125) tubing: .375 OD - .750 OD.  | 150-010-001    |