

# ELDON JAMES

Flexelene® 135C is a silicone alternative bioprocess, pharmaceutical and peristaltic pump tubing.

Flexelene® 135C has been developed to meet the critical demands of bioprocess, medical and laboratory applications. This newly formulated TPE (thermoplastic elastomer) tubing is an excellent alternative to silicone.

FLXC 135C tubing is durable and an excellent choice for use in peristaltic pump applications. Sterilized by Ethylene Oxide (EtO), Gamma resistance to 45 kGy, Autoclave to 135C, temperature range -80°C to 135°C (-112°F to 275°F), RoHS compliant, 68 Shore A hardness.

Manufactured for ultra-pure fluid transfer and meets a diverse range of pharmaceutical, medical and bioprocessing applications. Flexelene® 135C meets the requirements of REACH, RoHS, USP 661, BPOG, CFR, USP Class VI, ISO 9001 and 13485 and other special test requirements.

## Typical Applications:

- Pharmaceutical and biotech processing
- Single-use systems
- Peristaltic Pump Tubing
- Sterile filling
- Laboratory use

## Product Features:

- Superior Bio Compatibility
- Extremely Flexible with Excellent resilience and bend radius.
- Ultra-Pure Medical Grade
- Ultra-low Extractables / Leachables
- BPOG Tested
- USP 661 Compliant
- REACH and RoHS Compliant
- ISO 10993-5 – Non-cytotoxic
- ISO 10993-4 – Non-hemolytic
- PVC-Free – No DEHP Additives
- Low Gas and Oxygen Permeability
- No Halogens or Phthalates
- Low Protein Binding
- Non-pyrogenic Material
- Thermally Weldable
- Non-animal derived – BSE/TSE compliant
- Material Certificate and Lot Traceability

## FLXC 135C vs Silicone Tubing

	FLXC 135C Tubing	Silicone Tubing
FDA and Class VI compliant	Yes	Yes
Chemical Resistance	Yes	Yes
UV resistant	Yes	Yes
Soft and Flexible	Yes	Yes
Green Material - Recyclable	Yes	No
Bondable to select plastics (PP, PC)	Yes	No
High Impact Strength	Yes	Yes
Sterilization - Gamma, EtO, Autoclave	Yes - 45 kGy/135C	Yes
Cost	\$	\$\$\$

## Order Information

Cat. No.	Ref ID	Actual ID	Ref OD	Actual OD	Wall	Roll Length	Minimum Bend Radius	Max. working pressure* at 68°F (20°C) psi* (bar)
FLXC.5-1.5	1/32"	0.031 ± 0.005	3/32"	0.125 ± 0.005	3/64"	50 ft.	0.06	49 psi (3.38 bar)
FLXC.5-2	1/32"	0.031 ± 0.005	1/8"	0.093 ± 0.005	1/32"	50 ft.	—	—
FLXC1-2	1/16"	0.063 ± 0.005	1/8"	0.125 ± 0.005	1/32"	50 ft.	0.06	33 psi (2.25 bar)
FLXC1.5-2.5	3/32"	0.094 ± 0.005	5/32"	0.156 ± 0.005	1/32"	50 ft.	0.19	25 psi (1.73 bar)
FLXC2-3	1/8"	0.125 ± 0.005	3/16"	0.187 ± 0.005	1/32"	50 ft.	0.30	18 psi (1.20 bar)
FLXC2-4	1/8"	0.125 ± 0.005	1/4"	0.250 ± 0.005	1/16"	50 ft.	0.20	34 psi (2.35 bar)
FLXC3-4	3/16"	0.187 ± 0.005	1/4"	0.250 ± 0.005	1/32"	50 ft.	0.60	13 psi (0.92 bar)
FLXC3-5	3/16"	0.187 ± 0.005	5/16"	0.312 ± 0.005	1/16"	50 ft.	0.40	23 psi (1.59 bar)
FLXC3-6	3/16"	0.187 ± 0.005	3/8"	0.375 ± 0.005	3/32"	50 ft.	0.30	33 psi (2.30 bar)
FLXC4-6	1/4"	0.265 ± 0.005	3/8"	0.390 ± 0.005	1/16"	50 ft.	0.80	18 psi (1.25 bar)
FLXC4-7	1/4"	0.265 ± 0.005	7/16"	0.448 ± 0.008	3/32"	50 ft.	0.90	24 psi (1.65 bar)
FLXC4-8	1/4"	0.265 ± 0.005	1/2"	0.510 ± 0.008	1/8"	50 ft.	0.50	29 psi (1.99 bar)
FLXC5-7	5/16"	0.323 ± 0.008	7/16"	0.448 ± 0.008	1/16"	50 ft.	1.00	16 psi (1.09 bar)
FLXC6-8	3/8"	0.385 ± 0.008	1/2"	0.510 ± 0.008	1/16"	50 ft.	1.80	14 psi (0.99 bar)
FLXC6-10	3/8"	0.385 ± 0.008	5/8"	0.635 ± 0.008	1/8"	50 ft.	1.00	22 psi (1.51 bar)
FLXC8-12	1/2"	0.510 ± 0.008	3/4"	0.760 ± 0.010	1/8"	50 ft.	1.40	19 psi (1.34 bar)
FLXC10-14	5/8"	0.635 ± 0.010	7/8"	0.885 ± 0.010	1/8"	50 ft.	1.80	15 psi (1.06 bar)
FLXC12-16	3/4"	0.760 ± 0.010	1"	1.010 ± 0.010	1/8"	50 ft.	2.80	14 psi (0.97 bar)
FLXC12-20	3/4"	0.760 ± 0.010	1 1/4"	1.260 ± 0.020	1/4"	50 ft.	1.75	20 psi (1.41 bar)
FLXC16-20	1"	1.010 ± 0.020	1 1/4"	1.260 ± 0.020	1/8"	50 ft.	6.00	8 psi (0.57 bar)
FLXC16-22	1"	1.010 ± 0.020	1 3/8"	1.390 ± 0.020	3/16"	50 ft.	—	—
FLXC22-28	1 3/8"	1.385 ± 0.020	1 3/4"	1.760 ± 0.020	3/16"	50 ft.	—	—

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

## Typical Material Physical Properties

Property	Value / Rating	ATSM Method
Durometer, (Hardness) Shore A	68	D2240
Color	Clear, Translucent Solid	N/A
Specific Gravity - (Cured 1:1 A&B)	.89	D792
Tensile Strength psi (Mpa)	(Break, 73 °F / 22.3 °C) 870 psi 6.00 MPa	D 412
Elongation - %	(Break, 73 °F / 22.3 °C) 470 %	D412

## Other Specifications

Property	Value / Rating
Protein Binding	Low - will not absorb your product
Gas Permeability	Low - will not absorb your product
Peristaltic Pump life	Low - 2260- Barrier O2 (CC/MIL/100), N2/ATM/Day
Multiple Autoclave Cycles	Can be re-sterilized and reused
Temperature	Min: -80°C (-112°F)
	Max: 135°C (+275°F)
Brittle Temperature	-55°C (-67°F)

Information provided by material vendor

## Certifications

- ISO 10993 (part 4 and 5)
- USP Class VI biocompatibility requirements
- USP 661 Compliant
- BPOG Tested
- Cytotoxicity Criteria
- CFR Title 21 Section 177.2600
- REACH Compliant
- RoHS Compliant
- Cleanroom Manufactured
- Fully Lot Traceable
- Non-animal derived – BSE/TSE compliant

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