



Smooth Outer

Saint-Gobain Performance Plastics' new PharmaSmooth™ flexible hose solves a long-standing problem associated with cleaning the rough surface of any hose covered with EPDM rubber. PharmaSmooth's EPDM outer surface achieves close to a 20 Ra rating, enabling you to quickly and easily remove dirt on the hose cover with a wet cloth and enhancing the overall cleanliness of your operation.

Smooth Inner

The Chemfluor® FEP fluoropolymer liner used in PharmaSmooth™ has been the top choice in the process industry for many years. The high purity, ultra-smooth inner bore surface of the hose prevents virtually all material entrapment and bacteria build-up, meeting the stringent sanitary standards required in critical processing applications such as pharmaceutical, bio-pharmaceutical, food and beverage production. Chemfluor®'s superb chemical resistance minimizes the corrosive effects of transferred media, enabling PharmaSmooth™ to deliver exceptional flow rates over the life of the hose.

BIOPHARMACEUTICAL PRODUCTS

Smooth OD & ID Chemfluor® FEP Fluoropolymer Lined EPDM Covered Flexible Hose

Features/Benefits

- Ultra smooth OD surface
- Easy to clean
- Smooth ID when bent
- Imparts no taste or odor
- Excellent bend radius
- Kink resistant
- Sterilizable and autoclavable
- Non-aging liner
- Full vacuum rated
- Super chemical resistant

Typical Applications

- Load cells
- Skid transfer
- Pumping stations/portable pumps
- Vessel or tank transfer
- Rail car loading/unloading
- Transfer lines
- CIP
- Chemical process lines

Connections

PermaSeal® Crimp Style Fittings:

- Over 40 styles of crimp-style fittings in a wide range of materials

Flare-Thru Fittings:

- Available in Sanitary Clamp style, Flange style and locking or non-locking swivel female cam-lock styles

Flexible Components PharmaSmooth™ Series

Hose Specifications

PharmaSmooth™ Hose Specifications

Part Number	Inside Diameter		Outside Diameter		Maximum Working Pressure		Maximum Burst Pressure		Minimum Bend Radius		Vacuum Hg @ 70° F		Weight	
	in.	mm	in.	mm	PSI	Mpa	PSI	Mpa	in.	mm	in.	mm	lb./ft.	kg/m
08PSTLCT	1/2	12.7	7/8	23.1	500	3.45	2,100	14.48	2.50	63.50	29.9	75.95	0.35	0.52
12PSTLCT	3/4	19.1	1-1/4	31.8	500	3.45	2,100	14.48	3.25	82.55	29.9	75.95	0.62	0.92
16PSTLCT	1	25.4	1-1/2	38.1	450	3.10	1,800	12.41	4.75	120.65	29.9	75.95	0.75	1.12
20PSTLCT	1-1/4	31.8	1-3/4	44.5	320	2.21	1,600	11.03	7.00	177.80	29.9	75.95	0.98	1.46
24PSTLCT	1-1/2	38.1	2	52.1	300	2.07	1,350	9.31	9.00	228.60	29.9	75.95	1.20	1.79
32PSTLCT	2	50.8	2-5/8	67.3	250	1.72	1,200	8.27	11.50	292.10	29.9	75.95	1.50	2.24
40PSTLCT	2-1/2	63.5	3-1/4	81.3	200	1.38	900	6.21	18.00	457.20	29.9	75.95	2.35	3.50
48PSTLCT	3	76.2	3-3/4	93.0	150	1.03	700	4.83	22.00	558.80	29.9	75.95	2.50	3.73
64PSTLCT	4	101.60	4-3/4	119.4	150	1.03	600	4.14	34.00	863.60	29.9	75.95	3.60	5.36

NOTE: Weights and outside diameter dimensions are nominal. End fitting vs. hose pressure limitations must be considered and the lower of the two ratings must be used on assemblies.

Chemfluor® Physical Properties	Durometer Hardness Shore, A, 15s	Color	Maximum Recommended Operating Temp. °F (°C)	Tensile Strength psi (M Pa)	Ultimate Elongation %	Brittle Temperature	Specific Gravity	Water Absorption %	Chemical Solvent Resistance	Folding Endurance (cycles)
ASTM Method	D2240-91			D1457, D1708, D638	D1457, D1708, D638	D746-79	D792	D570-81		
Chemfluor® FEP	55D	Translucent	400 (204)	3400 (23)	325	-100°F	2.15	<0.01	Excellent	5 - 80 x 10 ³
Chemfluor® PFA	60D	Translucent	500 (260)	3600 (25)	300	-320°F (-196°F)	2.15	<0.03	Excellent	50 - 500 x 10 ³
Chemfluor® PTFE	58D	Translucent	500 (260)	3000 -5000 (20.7 - 34.5)	300	-450°F	2.13 - 2.22	<0.01	Excellent	10 ⁶

Industry Approvals & Compliances

- FDA approved per 21 CFR 177.1550
- US Pharmacopoeia Class VI

Construction

- Inner Tube: Chemfluor® FEP
- Cover: Convuluted EPDM rubber
- Reinforcement:
 - Multiple polyester plycord and EPDM rubber
 - Double helix, high tensile strength carbon steel wire

Colors

- Light grey with a white lay line in grey lettering
- Other colors are available as special orders. Minimum quantity required. Consult factory for details.

Temperature Rating

- -40°F to +350°F (-40°C to +177°C)

Important Helpful Tips in Hose Applications

Burst pressure ratings at ambient 70°F (21°C). See applicable notes below on vacuum/pressure ratings at temperatures other than ambient.

Working Pressure is given @ 70°F; Decrease working pressure 1% or every 2°F above 212°F.

Vacuum Rating is given @ 70°F; Decrease vacuum rating 1% for every 2°F above 212°F. For 1-1/4" and larger sizes, vacuum rating decreases when installed less than 2 X min. bend radius.

Flare-Thru fittings are pressure rated only. Not rated for vacuum service.

Extended Service Life Tip: Flexible Components suggest using full-length anti-kink armor casing or at least 16" to 24" long anti-kink cuffs (see Hose Cover Options, pages 75-76) at each fitting end to help reduce the strain on the crimp collar and fittings in high load installations. Prolonged service at elevated temperatures will reduce total service life.

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