



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 Chemflur® 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. Chemflur®'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 Chemflur®
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

Fitting Options

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

PharmaSmooth™ Hose Specifications

Chemflur® Fluoropolymer Hose

Part Number	Inside Diameter		Outside Diameter		Maximum Working Pressure		Minimum Burst Pressure		Minimum Bend Radius		Vacuum Hg @ 70°F	
	in.	mm.	in.	mm.	PSI	Mpa	PSI	Mpa	in.	mm.	in.	mm.
08PSTLCT	1/2	12.7	7/8	23.1	500	3.45	2,100	14.48	2.50	63.50	29.9	75.95
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
16PSTLCT	1	25.4	1-1/2	38.1	450	3.10	1,800	12.41	4.75	120.65	29.9	75.95
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
24PSTLCT	1-1/2	38.1	2	52.1	300	2.07	1,350	9.31	9.00	228.60	29.9	75.95
32PSTLCT	2	50.8	2-5/8	67.3	250	1.72	1,200	8.27	11.50	292.10	29.9	75.95
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
48PSTLCT	3	76.2	3-3/4	93.0	150	1.03	700	4.83	22.00	558.80	29.9	75.95
64PSTLCT	4	101.60	4-3/4	119.4	150	1.03	600	4.14	34.00	863.60	29.9	75.95

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.

Chemflur® Physical Properties

Property	Durometer** Hardness Shore, A, 15s	Color*	Maximum Recommended Operating Temp. °F (°C)	Tensile Strength psi (M Pa)	Ultimate Elongation %	Brittle Temp.	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		
Chemflur® FEP	55D	Translucent	400 (204)	3400 (23)	325	-100°F	2.15	<0.01	Excellent	5 - 80 x 103
Chemflur® PFA	60D	Translucent	500 (260)	3600 (25)	300	-320°F (-196°F)	2.15	<0.03	Excellent	50 - 500 x 103
Chemflur® PTFE	58D	Translucent	500 (260)	3000 -5000 (20.7 - 34.5)	300	-450°F	2.13 - 2.22	<0.01	Excellent	106

*Other colors are available as special orders. Minimum quantity required. Consult factory for details.

Industry Approvals & Compliances

- FDA approved per 21CFR177.1550
- US Pharmacopoeia Class VI

Construction

- Inner Tube: Chemflur® FEP
- Cover: Convoluted EPDM rubber
- Reinforcement:
 - Multiple polyester pycord 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

- -400F to +3500F (-400C to +1770C)

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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