

## Venaflon® HF-X

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### Applications

It is specially recommended for the transport of liquid or semi-liquid fluids in the food, cosmetic, chemical and pharmaceutical industries.

This hose presents a wide field of application due to its construction which gives it a balance between strength and lightness. The inner layer for this hose is made of PFA (Perfluoroalkoxy) which has a high compatibility with highly aggressive chemicals.

This hose is able to transport liquid or semi-liquid food-stuffs by impulsion or suction, since its design can resist either pressure or vacuum.

### Limitations

Respect the bending radius and work pressure established values.

Mind the chemical compatibility of the fluid with the inner PFA

### Regulations

The inner layer of PFA is in compliance of:

- US FDA Standard 21 CFR 177.1550
- USP Class VI <88> in vivo tests
- USP Class VI <87> in vitro tests
- ISO 10993-5, 10 y 11

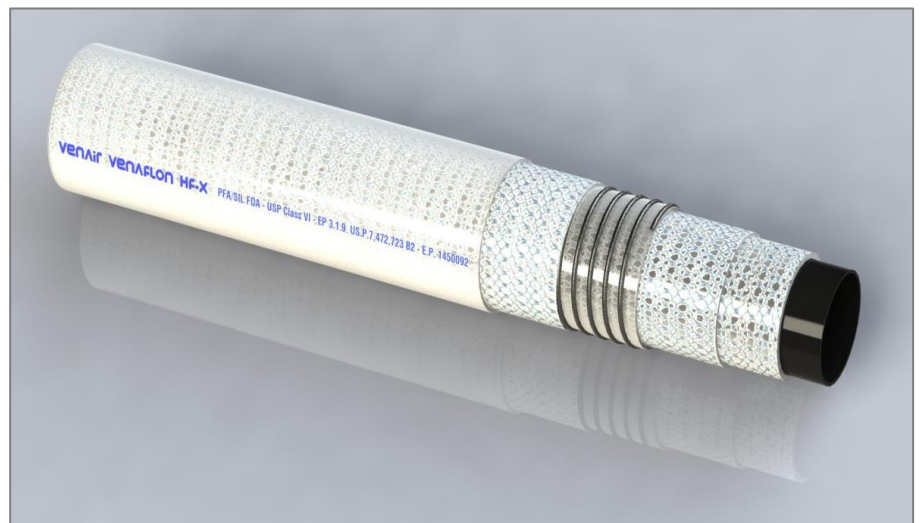
The outer silicone layer is in compliance of:

- US FDA Standard 21 CFR 177.2600
- USP Class VI <88> in vivo tests
- USP Class VI <87> in vitro tests
- ISO 10993-5, 10 y 11
- European Pharmacopoeia 3.1.9

### Properties

- Odorless, tasteless and completely non-toxic.
- High flexibility
- The inner PFA layer of this hose presents a resistivity lower than  $10^6 \Omega$ .
- Black and smooth appearance of the inner layer of PFA, translucent and smooth appearance of the outer silicone layer.
- Can be equipped with 316L stainless steel fittings on each end with a roughness value of less than  $0,8 \mu\text{m}$  (or  $0,5 \mu\text{m}$  on request).
- Upon request it can be equipped with Clamp fittings with a conductive inner cover of PFA.
- Operational temperature range from  $-30^\circ\text{C}$  ( $-22 \text{ F}$ ) to  $+150^\circ\text{C}$  ( $302 \text{ F}$ ).
- The hose is manufactured in a maximum length of 20m (65.62 ft).  
The vacuum resistance is 0.9 bar (13.05 psi).

### Technical Specifications



Inner Diameter		Wall Thickness ISO 1307		Working Pressure ISO 1402		Bending Radius ISO 1746	
<i>mm</i>	<i>Inch</i>	<i>+0.8/ -0.8 mm</i>	<i>±0.03 inch</i>	<i>Bar a 20°C</i>	<i>Psi at 68°F</i>	<i>mm</i>	<i>inch</i>
13.0	1/2	6.0	0.24	10	145.04	120	4.72
19.0	3/4	6.0	0.24	10	145.04	120	4.72
25.0	1	6.0	0.24	10	145.04	150	5.91
32.0	1 1/4	6.0	0.24	10	145.05	200	7.87
38.0	1 1/2	6.5	0.26	10	145.05	250	9.84
51.0	2	8.0	0.31	10	145.05	300	11.81
63.5	2 1/2	8.0	0.31	5	72.52	380	14.96
76	3	8.0	0.31	5	72.52	460	18.11

### Construction

This reference is manufactured with a conductive ( $R < 10^6 \Omega$ ) black inner layer of PFA (Perfluoroalkoxy), polyester reinforcements and a stainless steels spring wire encased.

### Technical information for explosive atmospheres

#### Obligations

- This reference is outside the scope of the ATEX Directive 94/9/EC due to the fact it's a product having not their own source of ignition.
- End-to-end electrical bonding to assure continuity is necessary; metal helix of the hose must be connected electrically to both end fittings.
- Properly connect of the hose to earth (is necessary earth the hose metal fittings or directly the wire of both ends of the hose).
- This hose cannot be used for transport of explosive materials.

### Electrical properties

	Reference standards	Classification of hose grades
Electrical features information	ISO 8031:2009 / EN12115 (if is complete with end fittings) $R < 100\Omega$	Continuous electrically bonded
	ISO 8031:2009 & IEC/TS 60079-32-1:2013 <b>Antistatic only on inner lining</b> (incorporating antistatic layer, $1k\Omega \leq R \leq 100M\Omega$ )	$\Omega$ -L
Explosive Atmosphere inside the hose	ATEX ZONES	Zone 0-20 (Class I & II D1) Zone 1-21 (Class I & II D1) Zone 2-22 (Class & II D2)  According to IEC/TS 60079-32-1:2013 the hose can classify as "Acceptable" for flammable high conductive liquids ( $>10.000$ pS/m), and as "Generally acceptable <sup>1</sup> " for medium and low conductive liquids ( $<10.000$ pS/m).
Explosive Atmosphere outside the hose	ATEX ZONES	Zone 0-20 (Class I & II D1) Zone 1-21 (Class I & II D1) Zone 2-22 (Class & II D2) <b>It is necessary a specific analysis of the risk according to the point "Use precautions"</b>

### Use precautions

<sup>1</sup> "Generally acceptable". Antistatic  $\Omega$ -L grade hoses are acceptable in most circumstances but should be avoided immediately downstream of high charging devices such as high throughput fine filters that may generate more than 10  $\mu$ A of current (point 7.7.3.5 of IEC/TS 60079-32-1:2013).

**⚠** Where rates of charge generation can exceed 10  $\mu$ A, Antistatic  $\Omega$ -L grade hoses, may not be able to dissipate charges safely. In this case, a Grade  $\Omega$ -L or  $\Omega$ -CL Conductive hose should be used.

- This hose cannot be used with pneumatic transport of bulk materials. For such pneumatic transport the leakage resistance from any place of the inner wall of the hose has to be less than 100 M $\Omega$  (point 9.3.3 of IEC/TS 60079-32-1:2013).

- The end-to-end resistance of the hose should be checked regularly to ensure that this bonding remains intact. It's recommendable to perform this check before each use.

- It is not allowed a prolonged friction in the surface of the hose.

- The hose must be clean of flammable products.

- The hose should be inspected over the entire length for signs of hardening, abrasion, cuts, kinking, crushing, cracks, scratches, breaks or tears. It's recommendable to perform this check before each use. These faults required the affected hose to be replaced.