

## Venaflon® FULL - X

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### Applications

Venaflon FULL-X is a highly flexible universal hose and its main characteristic is that it is conductive and, therefore, suitable for working areas requiring utmost safety.

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

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.

The perfluorinated inner liner ensures utmost chemical and temperature resistance, an excellent impermeability and absolutely hygienic and contamination-free delivery of fluid.

### Limitations

Respect the bending radius and work pressure established values.

Mind the chemical compatibility of the fluid with the inner PFA.

Not autoclavable.

### 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
- Reg 1935/2004/EEC, and Reg 10/2011/EEC

### Properties

- Odorless, tasteless and completely non-toxic.
- High flexibility
- The hose presents a resistivity lower than  $10^9\Omega$ .
- Black and smooth appearance of the inner layer of PFA and black and smooth outer rubber 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).
- Operational temperature range from  $-20^\circ\text{C}$  to  $+65^\circ\text{C}$  in accordance with EN 12115:2011.
- Steam disinfection with peaks up to  $+164^\circ\text{C}$  for maximum 20 min.
- 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

- Construction: PFA, fully fluorinated, mirror-smooth, black colour, antistatic ( $10^6\Omega$ )
- Reinforcement: high strength plies of synthetic cord, embedded steel helix wire and built-in copper wires
- Outer layer: synthetic black rubber, resistant to abrasion, weather, oils and fats. It is completely smooth.

Inner Diameter		Wall Thickness		Working Pressure ISO 1402/2009		Vacuum	Weight	Bending Radius ISO 1746/1998	
<i>mm</i>	<i>inch</i>	<i>+1/ -0.5 mm</i>	<i>+0.04/ -0.02 inch</i>	<i>Bar a 20°C</i>	<i>Psi at 68°F</i>	<i>(bar)</i>	<i>(kg/m)</i>	<i>mm</i>	<i>inch</i>
13.0	1/2	6.0	0.24	10	145.04	-0.9	0.51	135	5.31
19.0	3/4	6.0	0.24	10	145.04	-0.9	0.67	188	7.40
25.0	1	6.0	0.24	10	145.04	-0.9	0.88	225	8.85
32.0	1 1/4	6.5	0.26	10	145.04	-0.9	1.16	262	10.31
38.0	1 1/2	6.5	0.26	10	145.04	-0.9	1.43	338	13.30
51.0	2	7.25	0.28	10	145.04	-0.9	1.95	412	16.22
63.5	2 1/2	8.0	0.31	10	145.04	-0.9	2.75	450	17.71
76	3	8.0	0.31	10	145.04	-0.9	3.20	525	20.66
100	4	8.5	0.33	10	145.04	-0.9	4.60	700	27.56

### Technical information for explosive atmospheres

#### Electrical properties

	Reference standards	Classification of hose grades
Electrical features information	ISO 8031:2009 / EN12115 (if is complete with end fittings) R<100Ω	Continuous electrically bonded
	ISO 8031:2009 & IEC/TS 60079-32-1:2013 <b>Conductive inner lining</b> (incorporating conductive only on inner lining , R<1MΩ)	Ω-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 (>10.000 pS/m), 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>

### 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.

### Use precautions

- 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.