Technical Datasheet

VENA TECHNIPUR® VAC FDA-X

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Applications

This product is especially recommended for suction and transport in food and pharmaceutical industries. It is generally acceptable for pneumatic transport of flammable and non-flammable bulk materials and suction of all types of abrasive particles. It is recommended for chemical industry and when a low electrical surface resistivity is required.

Limitations

Not suitable for SIP steam process.

Respect work pressure established values.

Mind the chemical compatibility of the material with the polyurethane.

Regulations

Food quality polyurethane

- US FDA Standard 21 CFR 177.1680 and CFR 177.2600.
- According to Regulation 1935/2004/EC and 10/2011/ECC.
- German BfR Standard Recommendation XXXIX

Polyurethane used is in accordance with EU Directive 2002/95/ECC for Restriction of the use of hazardous substances (RoHS)

Properties

- Odorless, tasteless and completely non-toxic.
- Smooth and transparent polyurethane hose, made with special polyurethane without carbon black or other additives.
- BPA (Bisphenol-A) and Phthalates free.
- Easy follow of the flow due to the high transparency level.
- High flexibility and highly abrasion resistant.
- Can be equipped with 316L stainless steel fittings on each end with a roughness value of less than 0.8 μm (or 0.5 μm on request).
- Operational temperature range from -20ºC (-4 ºF) to +80ºC (176 ºF), it may reach up to +100ºC (212 ºF) during short periods of time.
- The polyurethane material has an electrical surface resistivity, according to IEC/TS 60079-32-1, of $<10^9\,[\Omega\cdot\mathrm{m}]$.

Construction

This reference is manufactured with one layer of polyurethane sheet and stainless steel wire spring encased inside the hose.

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Inner Diameter		Wall Thickness		Working Pressure ISO 1402/2009		Bursting Pressure ISO 1402/2009		Vacuum Resistance ISO 7233/2006		Bending Radius ISO 1746/2000	
mm	*inch*	*+0.04/ -0.02 mm*	*+1.57x10 $^{-3}$/ -7.87x10^{-4} inch*	*Bar at 20ºC*	*Psi at 68 F*	*Bar at 20ºC*	*Psi at 68 F*	*Bar at 20ºC*	*Psi at 68 F*	*mm*	*inch*
50	1.97	1.20	0.05	2.07	30.02	6.21	90.05	0.61	8.85	85	0.28
55	2.17	1.20	0.05	1.87	27.12	5.61	81.35	0.55	7.98	93	0.31
60	2.36	1.20	0.05	1.71	24.80	5.13	74.39	0.51	7.40	100	0.33
65	2.56	1.20	0.05	1.58	22.91	4.74	68.73	0.47	6.82	108	0.35
70	2.76	1.20	0.05	1.46	21.17	4.38	63.51	0.43	6.24	115	0.38
75	2.95	1.20	0.05	1.36	19.72	4.08	59.16	0.4	5.80	123	0.40
80	3.15	1.20	0.05	1.28	18.56	3.84	55.68	0.38	5.51	130	0.43
85	3.35	1.20	0.05	1.2	17.40	3.60	52.20	0.36	5.22	138	0.45
90	3.54	1.20	0.05	1.13	16.39	3.39	49.16	0.34	4.93	145	0.48
95	3.74	1.20	0.05	1.07	15.52	3.21	46.55	0.32	4.64	153	0.50
100	3.94	1.20	0.05	1.01	14.65	3.03	43.94	0.3	4.35	160	0.52
105	4.13	1.20	0.05	0.96	13.92	2.88	41.76	0.29	4.21	168	0.55
110	4.33	1.20	0.05	0.92	13.34	2.76	40.02	0.27	3.92	175	0.57
115	4.53	1.20	0.05	0.88	12.76	2.64	38.28	0.26	3.77	183	0.60
120	4.72	1.20	0.05	0.84	12.18	2.52	36.54	0.25	3.63	190	0.62
125	4.92	1.20	0.05	0.81	11.75	2.43	35.24	0.24	3.48	198	0.65
130	5.12	1.20	0.05	0.77	11.17	2.31	33.50	0.23	3.34	205	0.67
135	5.31	1.20	0.05	0.75	10.88	2.25	32.63	0.22	3.19	213	0.70
140	5.51	1.20	0.05	0.72	10.44	2.16	31.32	0.22	3.19	220	0.72
145	5.71	1.20	0.05	0.69	10.01	2.07	30.02	0.21	3.05	228	0.75
150	5.91	1.20	0.05	0.67	9.72	2.01	29.15	0.2	2.90	235	0.77
155	6.10	1.20	0.05	0.65	9.43	1.95	28.28	0.19	2.76	243	0.80
160	6.30	1.20	0.05	0.63	9.14	1.89	27.41	0.19	2.76	250	0.82
165	6.50	1.20	0.05	0.61	8.85	1.83	26.54	0.18	2.61	258	0.85
170	6.69	1.20	0.05	0.59	8.56	1.77	25.67	0.18	2.61	265	0.87
175	6.89	1.20	0.05	0.57	8.27	1.71	24.80	0.17	2.47	273	0.90
180	7.09	1.20	0.05	0.55	7.98	1.65	23.93	0.17	2.47	280	0.92
185	7.28	1.20	0.05	0.54	7.83	1.62	23.49	0.16	2.32	288	0.94
190	7.48	1.20	0.05	0.52	7.54	1.56	22.62	0.16	2.32	295	0.97
195	7.68	1.20	0.05	0.51	7.40	1.53	22.19	0.15	2.18	303	0.99
200	7.87	1.20	0.05	0.5	7.25	1.50	21.75	0.15	2.18	310	1.02
205	8.07	1.20	0.05	0.49	7.11	1.47	21.32	0.15	2.18	318	1.04
210	8.27	1.20	0.05	0.47	6.82	1.41	20.45	0.14	2.03	325	1.07
215	8.46	1.20	0.05	0.46	6.67	1.38	20.01	0.14	2.03	333	1.09
220	8.66	1.20	0.05	0.45	6.53	1.35	19.58	0.14	2.03	340	1.12
225	8.86	1.20	0.05	0.44	6.38	1.32	19.14	0.13	1.89	348	1.14
230	9.06	1.20	0.05	0.43	6.24	1.29	18.71	0.13	1.89	355	1.16

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235	9.25	1.20	0.05	0.42	6.09	1.26	18.27	0.13	1.89	363	1.19
240	9.45	1.20	0.05	0.41	5.95	1.23	17.84	0.13	1.89	370	1.21
245	9.65	1.20	0.05	0.4	5.80	1.20	17.40	0.12	1.74	378	1.24
250	9.84	1.20	0.05	0.4	5.80	1.20	17.40	0.12	1.74	385	1.26

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<100Ω	Continuous electrically bonded
	ISO 8031:2009 & IEC/TS 60079-32-1:2013 **Antistatic cover and lining** (incorporating antistatic cover and lining, 1kΩ≤R≤100MΩ)	Ω-CL
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[1]" for medium and low conductive liquids (<10.000 pS/m).

	Reference standards	Classification of hose grades
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) **It is necessary a specific analysis of the risk according to the point "Use precautions"**

Use precautions

[1] "Generally acceptable". Antistatic Ω-CL 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 µA of current (point 7.7.3.5 of IEC/TS 60079-32-1:2013).

⚠ Where rates of charge generation can exceed 10 µA, Antistatic Ω-L grade hoses, may not be able to dissipate charges safely. In this case, a Grade Ω-L or Ω-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 MΩ (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.