

# Pharmaline<sup>®</sup> N and X

PTFE hose for biotechnology and pharmaceutical fluid transfer

## FEATURES AND BENEFITS

- Replaces silicone rubber hose in applications where total internal chemical resistance is required
- Smooth bore for uninterrupted fluid flow and ease of cleaning
- Very flexible, yet kink resistant with a natural or anti-static PTFE liner
- Range of non-lined end fittings with laser etched ferrule for ultimate traceability
- Fully encapsulated hygienic labelling system available
- Assemblies suitable for COP soaking, CIP and SIP cleaning, and extensive autoclave sterilising cycles



## TECHNICAL SPECIFICATION

Hose bore size range	
Pharmaline N	¼" (6.8mm) up to 3" (80mm)
Pharmaline X	¼" (6.8mm) up to 2" (50mm)
Hose lengths	
Pharmaline N	
up to 2" (50mm)	up to 30m (100ft)
up to 2 ½" (65mm)	up to 18m (59ft)
up to 3" (80mm)	up to 15m (49ft)
Pharmaline X	
up to 1" (25mm)	up to 20m (65ft)
up to 2" (50mm)	up to 6m (20ft)
Temperature limits	
Temperature limits	-73C (-100F) up to +204C (+400F)
Working pressure ratings	
Pharmaline N	80bar (1,160psi) for ¼" up to 15bar (218psi) for 3"
Pharmaline X	7.5bar (109psi) for ¼" up to 2bar (29psi) for 2"
Vacuum limitations	
Vacuum resistant to	-0.9bar for all sizes up to +150C (+302F)
Approvals (both natural and anti-static)	
USP Class VI, ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2015, EN16643:2016, ATEX, FDA (materials), 3-A 62-02, 3.1 Traceability, (EU) 10/2011	

## OPTIONS AND ACCESSORIES

Liner options	
Liner available in;	General purpose (GP) natural PTFE or Anti-static PTFE (AS)
End fitting options	
Non-lined design for;	ANSI 150, DIN and JIS swivel flange, Cam and Groove, Sanitary Triclamp, DIN11851, RJT and SMS, and BSP, NPT and JIC threaded fittings.
3-A Sanitary fittings	Fittings accredited to to 3-A sanitary standards are identified within the full Pharmaline N and X brochure
External cover	
Pharmaline N	White platinum cured silicone rubber cover (marked in accordance with EN16643:2016)
Pharmaline X	Clear platinum cured silicone rubber cover (marked in accordance with EN16643:2016)
Labelling options	
Standard labelling	Laser etched ferrule for ultimate traceability
Streamline tagging	Fully encapsulated hygienic labelling system
Colour coding	Coloured PTFE spiral strip wound on to the hose - left loose or encapsulated under transparent heat-shrunk polyolefin sleeve
Alternative design options	
If alternative hose designs like a different coloured silicone rubber, or PTFE lined fittings are required, it may be possible to match those requirements with the Bioflex Ultra product - consult Aflex Hose for details.	

## PERFORMANCE DATA

### Specifications for Pharmaline N

Nominal hose bore size		Actual hose bore size		Helix wire	Outside diameter of cover		Minimum bend radius		*Maximum working pressure		Burst pressure		Weight per unit length	
in	mm	in	mm		in	mm	in	mm	psi	bar	psi	bar	lb/ft	kg/mtr
1/4	6.4	0.260	6.6	-	0.460	11.6	3/4	19	1,160	80	4,641	320	0.11	0.17
3/8	9.5	0.382	9.7	-	0.610	15.5	1	25	1,015	70	4,061	280	0.14	0.22
1/2	12.7	0.516	13.1	√	0.845	21.4	1 1/2	38	870	60	3,480	240	0.25	0.37
5/8	16.0	0.638	16.2	√	0.990	25.2	2	50	725	50	2,900	200	0.35	0.52
3/4	19.0	0.760	19.3	√	1.120	28.5	2 1/2	63	655	45	2,610	180	0.42	0.65
1	25.4	1.012	25.7	√	1.455	37.0	4	100	580	40	2,320	160	0.57	0.88
1 1/4	32.0	1.268	32.2	√	1.755	44.6	5 1/4	130	510	35	2,030	140	0.85	1.30
1 1/2	38.0	1.516	38.5	√	2.035	51.7	6.70	170	435	30	1,740	120	1.14	1.70
2	50.0	2.012	51.1	√	2.580	65.6	8.27	210	405	28	1,624	112	1.58	2.36
2 1/2	65.0	2.508	63.7	√	3.169	80.5	11.81	300	290	20	1,100	80	2.41	3.59
3	80.0	3.024	76.8	√	3.654	92.8	13.78	350	218	15	870	60	2.96	4.40

\* Maximum working pressures vary with temperature. The maximum working pressure (MWP) of a hose assembly is limited to the lowest of the MWP's of either of the two end fittings, or of the hose itself as listed above. The MWP of the hose reduces as the operating temperature increases, consult Aflex Hose for guidance.

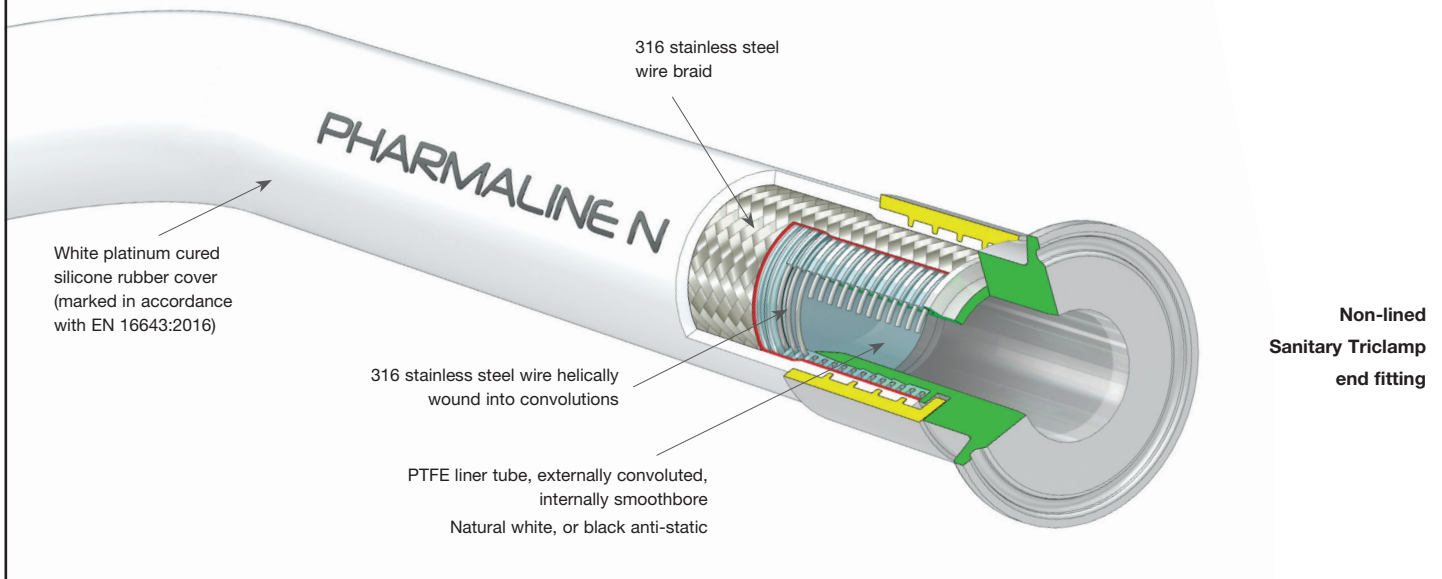
### Specifications for Pharmaline X

Nominal hose bore size		Actual hose bore size		Helix wire	Outside diameter of cover		Minimum bend radius		† Maximum working pressure		Burst pressure		Weight per unit length	
in	mm	in	mm		in	mm	in	mm	psi	bar	psi	bar	lb/ft	kg/mtr
1/4	6.4	0.260	6.6	-	0.456	11.6	1 1/4	30	109	7.5	435	30	0.06	0.09
3/8	9.5	0.382	9.7	-	0.610	15.5	1 1/2	38	87	6.0	348	24	0.09	0.14
1/2	12.7	0.516	13.1	√	0.845	21.4	2 3/8	60	84	5.8	334	23	0.21	0.32
5/8	16.0	0.638	16.2	√	0.990	25.2	2 1/2	64	72	5.0	290	20	0.19	0.29
3/4	19.0	0.760	19.3	√	1.120	28.5	3	75	72	5.0	290	20	0.37	0.55
1	25.4	1.012	25.7	√	1.455	37.0	4 3/4	120	60	4.0	240	16	0.44	0.81
1 1/4	32.0	1.268	32.2	√	1.755	44.6	5 1/2	140	43	3.0	175	12	0.50	0.75
1 1/2	38.0	1.516	38.5	√	2.035	51.7	7	180	29	2.0	116	8	0.74	1.11
2	50.0	2.012	51.1	√	2.580	65.6	12	300	29	2.0	116	8	1.28	1.91

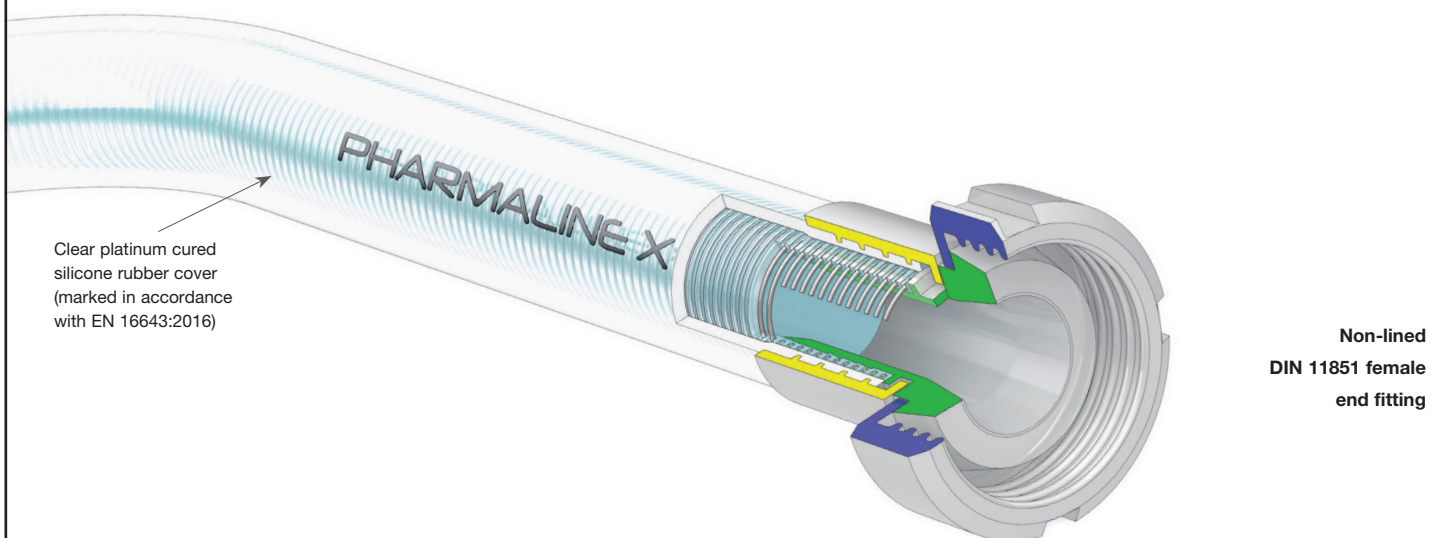
† Maximum working pressures do not vary with temperature

## MATERIALS OF CONSTRUCTION

### Pharmaline N PTFE hose assembly



### Pharmaline X PTFE hose assembly



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