Fluoropolymer (PFA) chemical hoses – for the most aggressive chemicals

DYNAMIC® SAFE - TECH

Hose for hazardous substances, for all explosion hazard zones

Inner layer: black PFA polymer
Reinforcement: synthetic cord, steel spiral
Cover: white-black UPE polyethylene, synthetic rubber
Working temperature: from -35°C to +130°C

Top-quality “FULL OHM” fully antistatic suction and delivery hose (Ω/T), designed to convey highly flammable and very chemically aggressive substances.

Inner layer of perfluoroalkoxy polymer PFA (a fluoropolymer with properties similar to PTFE), antistatic (R<10^6 Ω), mirror-smooth, meeting high hygienic requirements (FDA, USP, European EU). **Intermediate layers** of synthetic rubber, containing **reinforcement** of synthetic cord and a steel wire spiral. **Outer layer** MARBLE type (marbled), smooth, polyethylene-coated (UPE), antistatic (R<10^6 Ω), FDA-compliant, odourless and tasteless, resistant to abrasion, ozone and ageing, chemicals and brief exposure to aggressive acids. A further advantage of the MARBLE layer is its low friction coefficient - the hose slides and does not soil the surfaces it contacts, and is easy to clean.

Excellent **PFA chemical resistance** and **antistatic properties** of both the inner and outer layers (R<10^6 Ω) and across the hose wall (R<10^9 Ω) make the hose a costly but technically ideal solution for applications requiring the highest safety, in all **explosion hazard zones (ATEX)**. Used in the chemical, petrochemical, pharmaceutical and cosmetic industries, and in biotechnology. Not intended for autoclave sterilisation. A version with additional built-in copper wires (M/T) is available on special order.

Cleaning (food industry):

hot water	steam (open)	oxidising acids (peracetic, nitric), hydrogen peroxide (3%)	non-oxidising acids (phosphoric acid) (3%)	chlorine, sodium hypochlorite (200 ppm)	sodium hydroxide (3%)
95°C / 30 min	130°C / 30 min	max 80°C / 30 min	max 80°C / 30 min	80°C / 30 min	max 80°C / 30 min

Standards and requirements:

Chemical hoses: EN 12115:2021. Food industry, food contact: 1935/2004/EC, 2023/2006/EC (GMP); inner layer: 10/2011/EU (simulant fluids A, B, D1, D2), USP Class VI, FDA 21 CFR 177.1550; ISO 10993-4,-10,-11, non-cytotoxic (ISO 10993 Part 5); outer layer: FDA 21 CFR 177.1520. Contains no plasticisers, phthalates or substances of animal origin. Explosive atmospheres: ATEX directive (zones: 0, 1, 2, 20, 21, 22), EN 50014/ IEC 60079-0.

Chemical resistance check: PTFE chemical resistance table (preliminary selection), PFA resistance table (available from Tubes International, preliminary selection), confirmation of resistance and application conditions by Tubes International (in particular for temperatures above 50°C).

Assembly: Use hose tails that are smooth, without sharp or high barbs, which after crimping could cut or damage the inner PFA layer. The hose tail diameter should be precisely matched to the hose diameter to ensure leak-tightness. Assembly with ferrules or shell clamps. The hose (installation) should be earthed.

index	diameter inner [mm]	diameter outer [mm]	wall wall [mm]	pressure working [bar]	pressure burst [bar]	vacuum [bar]	bending bend* [mm]	weight [kg/m]	length length [m]
MT-DYNAMIC-ST-10	10	22	6	10	40	0,9	100	0,5	20
MT-DYNAMIC-ST-13	13	25	6	10	40	0,9	135	0,55	20
MT-DYNAMIC-ST-19	19	31	6	10	40	0,9	188	0,72	20
MT-DYNAMIC-ST-25	25	37	6	10	40	0,9	225	0,89	30
MT-DYNAMIC-ST-32	32	45	6,5	10	40	0,9	262	1,16	30
MT-DYNAMIC-ST-38	38	51	6,5	10	40	0,9	338	1,47	30
MT-DYNAMIC-ST-51	51	65,5	7,25	10	40	0,9	412	2,08	30
MT-DYNAMIC-ST-63	63,5	79,5	8	10	40	0,9	450	2,80	20
MT-DYNAMIC-ST-76	76	92	8	10	40	0,9	525	3,48	20
MT-DYNAMIC-ST-100	100	117	8,5	10	40	0,9	700	4,70	20

Notes: indices highlighted in colour – most commonly used. * - static minimum bend radius (for dynamic bending contact Tubes International).
The diameter range covered by EN 12115:2021 for suction and delivery hoses is DN19÷DN100.