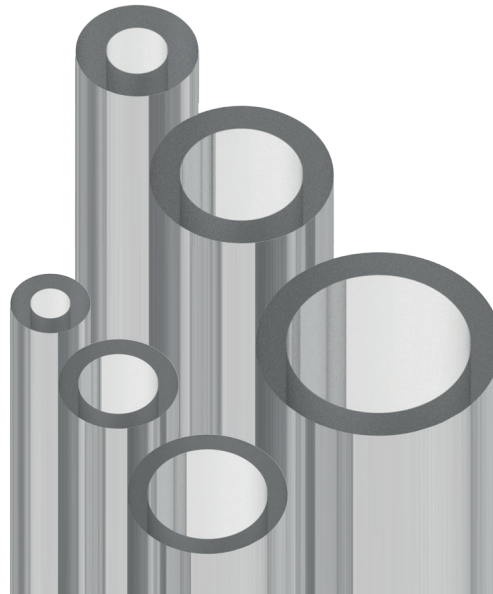


Tubes



CHARACTERISTICS

MATERIAL / SUITABILITY

Polyamid PA12-PHL	Polyamide 12w (PA) is marked by high robustness and comparatively good chemical resistance and is well suited for damp environments. The thermoplastic absorbs little water.
Polyethylen LD-PE	Polyethylene LD (PE-LD) is marked by high chemical resistance, good electrical insulation capabilities and good gliding behaviour.
Polyurethan PUR	Polyurethane (PU) is marked by special flexibility and has very good cold flexibility and recovery properties. It is resistant to aliphatic hydrocarbons, most lubricants and age-resistant in oxygen.
Polyvinylchlorid PVC Gewebe	PVC fabric tubes for air, gases, water and a great number of liquids. The tube is used as a compressed air tube in industry and as conveying hose in the chemical industry.
Fluorethylenpropylen FEP	Fluoroethylenpropylen (FEP) is mainly used for transparent tube materials. They have poreless, anti-adhesive interior walls and can be put through all usual sterilisation procedures. Since FEP in addition meets FDA requirements, the synthetic material is permitted for use in all areas of the food and pharma industries as well as medical technology.
Perfluoralkoxy- Copolymer PFA	Perfluoralkoxy-copolymer (PFA) has low resistance and hardness. It is resistant to nearly all chemicals, has a very high resistance to temperature and is flame-resistant. PFA has a low friction co-efficient and is suitable for food.

TUBE

Outside diameter D [mm] / Inside diameter d [mm]	4/2 4/2.5 4.3/3 5/3 6/4 6.2/4 8/6 8.2/6 10/8 10.2/8 11.6/9 12/9 12/10 12.5/10 14/11 15/12.5 16/13 17.6/13 22/18
Permitted Ø tolerance	see relevant table
Permitted wall thickness tolerance (s)	

OPERATING PRESSURE / TEMPERATURE

All versions	Maximum operating pressure in bar at temperature Displays the permitted operating pressure in bar at specified temperature.
---------------------	--

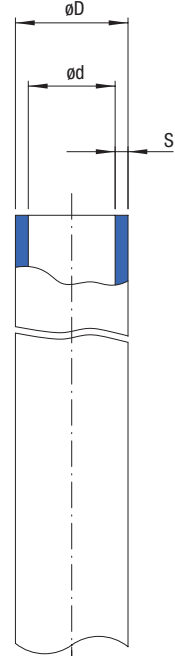
Polyamide Tube - Flexible

Price group **18** $T_{min} -60\text{ }^{\circ}\text{C}$
 $T_{max} +100\text{ }^{\circ}\text{C}$

Polyamide PA12-PHL

Diameter D/d	Tolerance		Min. bending radius [mm]	Maximum operating pressure in bar at temperature					Package Length [m]	Type	Order number	Price /100 m		
	$\varnothing D$	Wall thickness s		20 °C	40 °C	60 °C	80 °C	100 °C						
4 / 2.5	± 0.07	± 0.1	20	31	22.5	17.5	14.5	11.0	50	PA-4/25-transp.	295501	o. r.		
4 / 2.5			20	31	22.5	17.5	14.5	11.0	50	PA-4/25-blue	295502	o. r.		
4 / 2.5			20	31	22.5	17.5	14.5	11.0	50	PA-4/25-black	295506	o. r.		
5 / 3			25	34	25.0	19.0	15.5	12.0	50	PA-5/3-transp.	295521	o. r.		
5 / 3			25	34	25.0	19.0	15.5	12.0	50	PA-5/3-blue	295522	o. r.		
5 / 3			25	34	25.0	19.0	15.5	12.0	50	PA-5/3-red	295523	o. r.		
5 / 3			25	34	25.0	19.0	15.5	12.0	50	PA-5/3-green	295524	o. r.		
5 / 3			25	34	25.0	19.0	15.5	12.0	50	PA-5/3-yellow	295525	o. r.		
5 / 3			25	34	25.0	19.0	15.5	12.0	50	PA-5/3-black	295526	o. r.		
6 / 4			30	27	19.5	15.0	12.5	9.5	50	PA-6/4-transp.	295531	o. r.		
6 / 4			30	27	19.5	15.0	12.5	9.5	50	PA-6/4-blue	295532	o. r.		
6 / 4			30	27	19.5	15.0	12.5	9.5	50	PA-6/4-red	295533	o. r.		
6 / 4			30	27	19.5	15.0	12.5	9.5	50	PA-6/4-green	295534	o. r.		
6 / 4			30	27	19.5	15.0	12.5	9.5	50	PA-6/4-yellow	295535	o. r.		
6 / 4			30	27	19.5	15.0	12.5	9.5	50	PA-6/4-black	295536	o. r.		
8 / 6			40	19	14.0	10.5	8.5	6.5	50	PA-8/6-transp.	295541	o. r.		
8 / 6			40	19	14.0	10.5	8.5	6.5	50	PA-8/6-blue	295542	o. r.		
8 / 6			40	19	14.0	10.5	8.5	6.5	50	PA-8/6-red	295543	o. r.		
8 / 6			40	19	14.0	10.5	8.5	6.5	50	PA-8/6-green	295544	o. r.		
8 / 6			40	19	14.0	10.5	8.5	6.5	50	PA-8/6-yellow	295545	o. r.		
8 / 6			40	19	14.0	10.5	8.5	6.5	50	PA-8/6-black	295546	o. r.		
10 / 8			± 0.1	± 0.1	60	15	11.0	8.5	7.0	5.0	50	PA-10/8-transp.	295551	o. r.
10 / 8					60	15	11.0	8.5	7.0	5.0	50	PA-10/8-blue	295552	o. r.
10 / 8					60	15	11.0	8.5	7.0	5.0	50	PA-10/8-red	295553	o. r.
10 / 8	60	15			11.0	8.5	7.0	5.0	50	PA-10/8-green	295554	o. r.		
10 / 8	60	15			11.0	8.5	7.0	5.0	50	PA-10/8-yellow	295555	o. r.		
10 / 8	60	15			11.0	8.5	7.0	5.0	50	PA-10/8-black	295556	o. r.		
12 / 9	60	19			14.0	10.5	8.5	6.5	50	PA-12/9-blue	295572	o. r.		
12 / 10	85	12			8.5	6.5	5.5	4.0	50	PA-12/10-transp.	295581	o. r.		
12 / 10	85	12			8.5	6.5	5.5	4.0	50	PA-12/10-blue	295582	o. r.		
14 / 11	± 0.15	± 0.15			80	16	11.5	9.0	7.5	5.5	50	PA-14/11-transp.	295587	o. r.
14 / 11					80	16	11.5	9.0	7.5	5.5	50	PA-14/11-blue	295588	o. r.
14 / 11					80	16	11.5	9.0	7.5	5.5	50	PA-14/11-black	295590	o. r.
15 / 12.5			90	13	9.5	7.0	6.0	4.5	50	PA-15/125-transp.	295591	o. r.		
16 / 13			90	14	10.0	7.5	6.5	5.0	50	PA-16/13-transp.	295597	o. r.		
16 / 13			90	14	10.0	7.5	6.5	5.0	50	PA-16/13-blue	295598	o. r.		
16 / 13	90	14	10.0	7.5	6.5	5.0	50	PA-16/13-black	295600	o. r.				
22 / 18	± 0.15	± 0.20	150	13	9.5	7.0	6.0	4.5	50	PA-22/18-transp.	296211	o. r.		
22 / 18			150	13	9.5	7.0	6.0	4.5	50	PA-22/18-blue	296212	o. r.		
22 / 18			150	13	9.5	7.0	6.0	4.5	50	PA-22/18-black	296214	o. r.		

Illustration



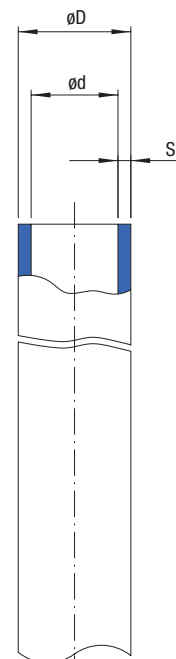
Polyethylene Tube - Flexible - High Pressure

Price group **18** $T_{min} -10\text{ }^{\circ}\text{C}$
 $T_{max} +40\text{ }^{\circ}\text{C}$

Polyethylene LD-PE

Diameter D/d	Tolerance		Min. bending radius [mm]	Maximum operating pressure in bar at perature			Package Length [m]	Type	Order number	Price /100 m
	$\varnothing D$	Wall thickness s		20 °C	30 °C	40 °C				
5 / 3	± 0.1	± 0.1	25	15.0	12.0	10.5	50	PE-5/3-transp.	295621	o. r.
5 / 3			25	15.0	12.0	10.5	50	PE-5/3-blue	295622	o. r.
5 / 3			25	15.0	12.0	10.5	50	PE-5/3-red	295623	o. r.
5 / 3			25	15.0	12.0	10.5	50	PE-5/3-green	295624	o. r.
5 / 3			25	15.0	12.0	10.5	50	PE-5/3-yellow	295625	o. r.
5 / 3			25	15.0	12.0	10.5	50	PE-5/3-black	295626	o. r.
6 / 4			30	13.0	10.5	9.0	50	PE-6/4-transp.	295631	o. r.
6 / 4			30	13.0	10.5	9.0	50	PE-6/4-blue	295632	o. r.
6 / 4			30	13.0	10.5	9.0	50	PE-6/4-red	295633	o. r.
6 / 4			30	13.0	10.5	9.0	50	PE-6/4-green	295634	o. r.
6 / 4			30	13.0	10.5	9.0	50	PE-6/4-yellow	295635	o. r.
6 / 4			30	13.0	10.5	9.0	50	PE-6/4-black	295636	o. r.
8 / 6			40	8.0	6.5	5.5	50	PE-8/6-transp.	295641	o. r.
8 / 6			40	8.0	6.5	5.5	50	PE-8/6-blue	295642	o. r.
8 / 6			40	8.0	6.5	5.5	50	PE-8/6-red	295643	o. r.
8 / 6			40	8.0	6.5	5.5	50	PE-8/6-green	295644	o. r.
8 / 6			40	8.0	6.5	5.5	50	PE-8/6-yellow	295645	o. r.
8 / 6			40	8.0	6.5	5.5	50	PE-8/6-black	295646	o. r.
10 / 8			60	6.0	4.5	4.0	50	PE-10/8-transp.	295651	o. r.
10 / 8			60	6.0	4.5	4.0	50	PE-10/8-blue	295652	o. r.
10 / 8			60	6.0	4.5	4.0	50	PE-10/8-red	295653	o. r.
10 / 8			60	6.0	4.5	4.0	50	PE-10/8-green	295654	o. r.
10 / 8			60	6.0	4.5	4.0	50	PE-10/8-yellow	295655	o. r.
10 / 8			60	6.0	4.5	4.0	50	PE-10/8-black	295656	o. r.

Illustration

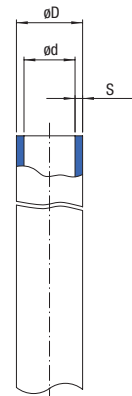


Polyurethane Tube - Flexible

 Price group **18** T_{min} -35 °C
 T_{max} +60 °C

**Polyurethane
PUR**

Diameter D/d	Tolerance		Min. bending radius [mm]	Maximum operating pressure in bar at temperature					Package Length [m]	Type	Order number	Price /100 m
	ø D	Wall thickness s		20 °C	30 °C	40 °C	50 °C	60 °C				
4 / 2.5	±0.1	±0.15	13	15	12.5	11.0	10.0	9.0	50	PU-4/25-transp.	295701	o. r.
4 / 2.5			13	15	12.5	11.0	10.0	9.0	50	PU-4/25-blue	295702	o. r.
4 / 2.5			13	15	12.5	11.0	10.0	9.0	50	PU-4/25-black	295706	o. r.
4.3 / 3			14	12	10.0	9.0	8.0	7.0	50	PU-43/3-transp.	295711	o. r.
4.3 / 3			14	12	10.0	9.0	8.0	7.0	50	PU-43/3-blue	295712	o. r.
4.3 / 3			14	12	10.0	9.0	8.0	7.0	50	PU-43/3-black	295716	o. r.
5 / 3			12	16	13.5	12.0	10.5	9.5	50	PU-5/3-transp.	295721	o. r.
5 / 3			12	16	13.5	12.0	10.5	9.5	50	PU-5/3-blue	295722	o. r.
5 / 3			12	16	13.5	12.0	10.5	9.5	50	PU-5/3-black	295726	o. r.
6 / 4			20	14	12.0	10.5	9.5	8.5	50	PU-6/4-transp.	295731	o. r.
6 / 4			20	14	12.0	10.5	9.5	8.5	50	PU-6/4-blue	295732	o. r.
6 / 4			20	14	12.0	10.5	9.5	8.5	50	PU-6/4-black	295736	o. r.
8 / 6			30	12	10.0	9.0	8.0	7.0	50	PU-8/6-transp.	295741	o. r.
8 / 6			30	12	10.0	9.0	8.0	7.0	50	PU-8/6-blue	295742	o. r.
8 / 6			30	12	10.0	9.0	8.0	7.0	50	PU-8/6-black	295746	o. r.
10 / 8			60	9	7.5	6.5	6.0	5.5	50	PU-10/8-transp.	295751	o. r.
10 / 8	60	9	7.5	6.5	6.0	5.5	50	PU-10/8-blue	295752	o. r.		
10 / 8	60	9	7.5	6.5	6.0	5.5	50	PU-10/8-black	295756	o. r.		

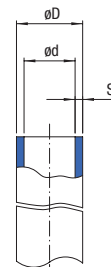
Illustration

PVC-Braid Tube - Flexible

 Price group **18** T_{min} -20 °C
 T_{max} +60 °C

**Polyvinylchlorid
PVC-Braid**

Due to the braid the tube shrinks by pressuration. Therefore it is recommended that up to 10 % excess length should be used.

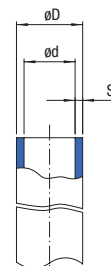
Diameter D/d	Tolerance		Min. bending radius [mm]	Maximum operating pressure in bar at temperature					Package Length [m]	Type	Order number	Price /100 m
	ø D	Wall thickness s		20 °C	30 °C	40 °C	50 °C	60 °C				
6.2 / 4	±0.15	±0.1	50	40	37,0	33,0	28,0	21,0	50	PV-6/4-blue	295832	o. r.
8.2 / 6	±0.2	±0.1	60	38	35,0	31,5	26,5	19,0	50	PV-8/6-blue	295842	o. r.
10.2 / 8			65	30	27,5	24,5	21,0	15,0	50	PV-10/8-blue	295852	o. r.
11.6 / 9	±0.25	±0.15	70	30	27,5	24,5	21,0	15,0	50	PV-115/9-blue	295862	o. r.
12.5 / 10			80	24	22,0	19,5	17,0	13,0	50	PV-12/10-blue	295882	o. r.
15 / 12.5			90	18	16,5	14,5	12,5	10,0	50	PV-15/125-blue	295892	o. r.
17.6 / 13	±0.3	±0.2	100	18	16,5	14,5	12,5	10,0	50	PV-176/13-blue	295897	o. r.

Illustration

Plastic Tube - Flexible

 Price group **18** T_{min} -200 °C
 T_{max} +205 °C

**Fluoroethylenpropylene
FEP**

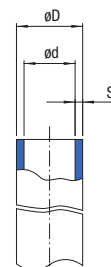
Diameter D/d	Tolerance		Min. bending radius [mm]	Maximum operating pressure in bar at temperature						Package Length [m]	Type	Order number	Price /100 m
	ø D	Wall thickness s		20 °C	50 °C	75 °C	100 °C	150 °C	200 °C				
4 / 2	±0.1	±0.1	16	27	20.0	16.5	10.5	4.0	1.0	50	FEP-4/2-natural	296001	o. r.
6 / 4			36	18	13.5	11.0	7.0	2.5	0.5	50	FEP-6/4-natural	296002	o. r.
8 / 6			64	13.5	10.0	8.0	5.0	2.0	0.5	50	FEP-8/6-natural	296003	o. r.
10 / 8			100	10.8	8.0	6.5	4.0	1.5	0.5	50	FEP-10/8-natural	296004	o. r.

Illustration

Plastic Tube - Flexible

 Price group **18** T_{min} -200 °C
 T_{max} +260 °C

**Perfluoroalkoxy-
copolymer PFA**

Diameter D/d	Tolerance		Min. bending radius [mm]	Maximum operating pressure in bar at temperature							Package Length [m]	Type	Order number	Price /100 m
	ø D	Wall thickness s		20 °C	50 °C	75 °C	100 °C	150 °C	200 °C	250 °C				
4 / 2	±0.1	±0.1	16	27	23.0	20.5	18.0	14.0	10.5	7.5	50	PFA-4/2-natural	296006	o. r.
6 / 4			36	18	15.5	13.5	12.0	9.5	7.0	5.0	50	PFA-6/4-natural	296007	o. r.
8 / 6			64	13.5	11.5	10.0	9.0	7.0	5.0	3.5	50	PFA-8/6-natural	296008	o. r.
10 / 8			100	10.8	9.0	8.0	7.0	5.5	4.0	3.0	50	PFA-10/8-natural	296009	o. r.
12 / 10			144	9	7.5	6.5	6.0	4.5	3.5	2.5	50	PFA-12/10-natural	296011	o. r.

Illustration


10-fold Tube Terminal								Illustration
Price group	18	T_{min} -20 °C T_{max} +50 °C		Polyethylene				
for tube D	L	L2	l1	D1	b	Type	Order number	Price
6	110	11	9	6	14	410N-6	296304	o. r.
8	140.5	14	12.5	7.5	15	410N-8	296305	o. r.

