



## FIPA Tubings and cables



- > Piping of vacuum and compressed air systems
- > Control cables for ejectors and vacuum switches



### Flexible vacuum pressure tubing made from polyurethane (PUR)

- > Very small bending radius
- > Standard blue transparent or intransparent

#### 61.090 - 61.096

- > High chemical stability and mechanical resistance
- > Outer diameter toleranced tubing, making them suitable for quick fittings

#### 61.056 - 61.062

- > Available in a wide range of colors
- > Outer diameter toleranced tubing, making them suitable for quick fittings

#### 61.020 - 61.030

- > Suitable for use in trailing chains, corrugated external surface

#### 61.005S - 61.011S

- > Self-extinguishing, flame-resistant according to DIN 4102 B1, corrugated external surface

> See page 704



### Vacuum-pressure tubing made from transparent fluoro resin (PFA)

- > Excellent resistance to chemicals, temperature and weather conditions
- > Used predominantly in chemical, foodstuff and medical industries

> See page 706



### Vacuum-pressure tubing made from highly flexible PVC, reinforced

- > Very abrasion-resistant
- > Suitable for use as transport tubing thanks to smooth interior walls

#### 61.160 - 61.169

- > Smooth external surface

> See page 707



## FIPA Tubings and cables



### Highly flexible, soft PVC tubing for pressure applications

- > Suitable for frequently occurring pivoting motions and oscillations
- > Not suitable for vacuum

> See page 710



### Spiral tubings made from black polyurethane (PUR) for vacuum and pressure applications

- > Space-saving tubings for mobile vacuum or pressure systems without straining the connections
- > Suitable for pneumatic tools

> See page 711



### Accessories:

Tubing nipples with male M and G threads

> See page 713



Reinforcing sleeves, especially for soft tubings

> See page 715



Tubing cutter with measuring tape

> See page 715



### Connection cable made from polyurethane (PUR)

- > Connection of vacuum switches, sensors or ejectors
- > Weather and oil resistant

> See page 717



# Connectors | Tubing

Flexible vacuum and pressure tubing made from PUR blue transparent

Flexible vacuum and pressure tubing made from PUR blue transparent

SUITABLE FOR INSTALLATION IN DRAG CHAINS



## Product Description

- > High flexibility enables small bending curve to build compact tubing systems
- > Suitable for air and tap water
- > Cut marks at 500 mm intervals facilitate installation
- > High chemical and mechanical resistance
- > Very high oil resistance

## Notes

- > Rule of thumb for installation in drag chain: Bending radius = 10 x outer diameter of tubing

## Technical data

Item no.	Outer diameter [mm]	Inner diameter [mm]	Minimum bending radius [mm]	Pressure range [bar]	Operating pressure at 20 °C [bar]	Usage temperature [°C]	Weight [g/m]	Packing unit [m]
61.090	3	2	8	-1 - 8	29	-15 - 60	7	20
61.091	4	2.5	10	-1 - 8	29	-15 - 60	9	20
61.092	6	4	15	-1 - 8	29	-15 - 60	19	20
61.093	8	5	15	-1 - 8	29	-15 - 60	36	20
61.094	10	6.5	20	-1 - 8	29	-15 - 60	54	20
61.095	12	8	30	-1 - 8	29	-15 - 60	74	20
61.096	12	9	30	-1 - 8	29	-15 - 60	68	20



Flexible vacuum and pressure tubing made of blue PUR

SUITABLE FOR INSTALLATION IN DRAG CHAINS

### Product Description

- > High flexibility enables small bending curve to build compact tubing systems
- > Suitable for air and tap water
- > Cut marks at 500 mm intervals facilitate installation

### Notes

- > Rule of thumb for installation in drag chain: Bending radius = 10 x outer diameter of tubing

### Ordering notes

- > Standard length 20 meters, colour blue
- > Available in various tubing lengths and a wide selection of colours (black, red, orange, ocher, yellow, green, blue, light blue, transparent, pure white)
- > 61.062 The standard colour is black
- > Length of 50 meters generally only available in black

### Technical data

Item no.	Outer diameter [mm]	Inner diameter [mm]	Minimum bending radius [mm]	Pressure range [bar]	Operating pressure at 20 °C [bar]	Usage temperature [°C]	Weight [g/m]	Packing unit [m]
61.056	3	2	8	-1 - 8	29	-15 - 60	7	20 / 50 / 100
61.057	4	2.5	10	-1 - 8	29	-15 - 60	9	20 / 50 / 100
61.058	6	4	15	-1 - 8	29	-15 - 60	19	20 / 50 / 100
61.059	8	5	15	-1 - 8	29	-15 - 60	36	20 / 50 / 100
61.060	10	6.5	20	-1 - 8	29	-15 - 60	54	20 / 50 / 100
61.061	12	8	30	-1 - 8	29	-15 - 60	74	20 / 50 / 100
61.062	16	11	60	-1 - 8	29	-15 - 60	128	20 / 50 / 100



# Connectors | Tubing

Vacuum and pressure tubing made of transparent Fluororesin (PFA)

## Vacuum and pressure tubing made of transparent Fluororesin (PFA)



FOR CHEMICAL, FOODSTUFF AND MEDICAL INDUSTRIES

### Product Description

- > Excellent resistance to chemicals, temperature and weather conditions
- > Very smooth, transparent inner surface
- > Suitable for air, water and corrosive fluids

### Notes

- > 61.069 to 61.073: Suitable for cleanroom applications

### Ordering notes

- > Standard packaging unit: 5 meters

### Technical data

Item no.	Outer diameter [mm]	Inner diameter [mm]	Minimum bending radius [mm]	Pressure range for air / gas [bar]	Pressure range for liquids [bar]	Operating pressure at 20 °C [bar]	Usage temperature [°C]	Weight [g/m]	Packing unit [m]
61.063	4	2.5	20	-0.99 - 9	3	49	-65 - 260	18	5 / 20
61.064	6	4	30	-0.99 - 9	3	49	-65 - 260	36	5 / 20
61.065	8	6	48	-0.99 - 9	3	39	-65 - 260	50	5 / 20
61.066	10	7.5	60	-0.99 - 9	3	39	-65 - 260	78	5 / 20
61.067	12	9	72	-0.99 - 9	3	59	-65 - 260	112	5 / 20
61.068	16	13	78	-0.99 - 9	3	34	-65 - 260	154	5 / 20
61.069	4	2.5	20	-0.99 - 9	3	49	-65 - 260	55	5
61.070	6	4	30	-0.99 - 9	3	49	-65 - 260	95	5
61.071	8	6	30	-0.99 - 9	3	39	-65 - 260	125	5
61.072	10	7.5	60	-0.99 - 9	3	39	-65 - 260	190	5
61.073	12	9	72	-0.99 - 9	3	39	-65 - 260	270	5



Vacuum and pressure tubing made of highly flexible transparent PVC, reinforced with wire spiral



### Product Description

- > Vacuum applications up to 95 %
- > Very smooth inner surface for residue-free transport of materials such as granulate
- > Suitable for continuous movement
- > High abrasion-proof

### Technical data

Item no.	Outer diameter [mm]	Inner diameter [mm]	Minimum bending radius [mm]	Pressure range [bar]	Usage temperature [°C]	Weight [g/m]	Packing unit [m]
61.160	13	8	32	-0.9 - 16	-5 - 65	140	1
61.161	16	10	20	-0.95 - 8	-5 - 65	155	1
61.162	18	12	25	-0.95 - 8	-5 - 65	180	1
61.163	20	14	30	-0.95 - 8	-5 - 65	200	1
61.164	22	16	35	-0.95 - 8	-5 - 65	225	1
61.165	24	18	40	-0.95 - 7	-5 - 65	280	1
61.166	27	20	50	-0.95 - 7	-5 - 65	340	1
61.167	33	25	60	-0.95 - 7	-5 - 65	510	1
61.168	42	32	75	-0.95 - 7	-5 - 65	730	1
61.169	53	40	100	-0.95 - 7	-5 - 65	1,220	1



# Connectors | Tubing

Highly flexible vacuum and pressure tubing made of PUR, reinforced with PVC spiral

Highly flexible vacuum and pressure tubing made of PUR, reinforced with PVC spiral



SUITABLE FOR INSTALLATION IN DRAG CHAINS

## Product Description

- > Vacuum applications up to 40 % vacuum
- > Very smooth inner surface for residue-free transport of materials such as granulate
- > Resistant to weather conditions and many chemicals
- > Outer surface slightly corrugated
- > Colour transparent

## Notes

- > Rule of thumb for installation in drag chain: Bending radius = 10 x outer diameter of tubing

## Ordering notes

- > Other sizes on request

## Technical data

Item no.	Outer diameter [mm]	Inner diameter [mm]	Minimum bending radius [mm]	Pressure range [bar]	Usage temperature [°C]	Weight [g/m]	Packing unit [m]
61.020	25	20	20	-0.4 - 1	-10 - 70	100	20
61.021	30	25	25	-0.4 - 1	-10 - 70	150	20
61.022	36	30	30	-0.4 - 1	-10 - 70	190	20
61.023	38	32	32	-0.3 - 0.5	-10 - 70	200	20
61.024	41	35	35	-0.3 - 0.5	-10 - 70	230	20
61.025	44	38	38	-0.3 - 0.5	-10 - 70	230	20
61.026	46	40	40	-0.3 - 0	-10 - 70	250	20
61.027	51	45	45	-0.3 - 0	-10 - 70	280	20
61.028	57	50	50	-0.3 - 0	-10 - 70	310	20
61.029	62	55	55	-0.3 - 0	-10 - 70	350	20
61.030	67	60	60	-0.3 - 0	-10 - 70	390	20
61.031	70	63	63	-0.3 - 0	-10 - 70	410	20
61.033	78	70	70	-0.3 - 0	-10 - 70	500	20
61.034	84	76	76	-0.3 - 0	-10 - 70	555	20
61.035	89	80	80	-0.3 - 0	-10 - 70	610	20
61.036	99	90	90	-0.3 - 0	-10 - 70	715	20
61.037	112	102	102	-0.3 - 0	-10 - 70	835	20
61.038	120	110	110	-0.3 - 10	-10 - 70	890	20
61.039	131	120	120	-0.3 - 0	-10 - 70	950	20
61.040	138	127	127	-0.2 - 0	-10 - 70	1,015	20
61.043	164	152	152	-0.2 - 0	-10 - 70	1,380	20



PUR highly flexible vacuum pressure tubing, reinforced, self-extinguishing



SUITABLE FOR INSTALLATION IN DRAG CHAINS

### Product Description

- > Highly flexible polyurethane for pressure and vacuum application tubing
- > Self-extinguishing, flame resistant according to DIN 4102 B 1
- > Alternative product in case of flying sparks, weld spatter or special fire safety obstructions
- > Reinforced with PVC-coated spring coil
- > Highly abrasion-proof
- > Smooth inner walls, corrugated external surface
- > Colour transparent

### Notes

- > Tubing built acc. to TRBS 2153 (zone 1 and 21) suitable for non-combustible dusts / bulk goods and gases / liquids of low conductivity Spiral ends shall be earthed at both sides to ensure good dissipation
- > Rule of thumb for installation in drag chain: Bending radius = 10 x outer diameter of tubing

### Technical data

Item no.	Outer diameter [mm]	Inner diameter [mm]	Minimum bending radius [mm]	Pressure range [bar]	Usage temperature [°C]	Weight [g/m]	Packing unit [m]
61.005S	18	13	13	-0.5 - 2	-40 - 90	82	10
61.006S	25	20	20	-0.45 - 1.8	-40 - 90	147	10
61.007S	30	25	25	-0.4 - 1.6	-40 - 90	183	10
61.008S	35	30	30	-0.35 - 1.5	-40 - 90	220	10
61.009S	45	40	40	-0.3 - 1.4	-40 - 90	380	10
61.010S	50	45	45	-0.28 - 1.5	-40 - 90	410	10
61.011S	56	50	50	-0.28 - 1.5	-40 - 90	460	10





# Connectors | Tubing

Highly flexible tubing made of soft PVC for light pressure applications

Highly flexible tubing made of soft PVC for light pressure applications



SUITABLE FOR FOODSTUFFS

## Product Description

- > Unpressurised and low-pressure applications with concurrent pivoting motions and oscillations
- > High flexibility enables small bending curves for compact tubing systems
- > FDA approval for aqueous foods
- > Extremely resistant to acids and bases
- > Colour transparent

## Notes

- > Not suitable for vacuum

## Technical data

Item no.	Outer diameter [mm]	Inner diameter [mm]	Minimum bending radius [mm]	Pressure range [bar]	Usage temperature [°C]	Weight [g/m]	Packing unit [m]
61.211	4	2	5	0 - 1	-5 - 60	9	20
61.212	6	4	14	0 - 1	-5 - 60	17	20
61.213	8	6	25	0 - 0.5	-5 - 60	23	20
61.214	10	7	25	0 - 0.5	-5 - 60	36	20
61.215	12	9	35	0 - 0.5	-5 - 60	52	10



## Spiral tubing made of black PUR for vacuum and pressure applications



### Product Description

- > Space-saving tubing for mobile vacuum or pressure systems without straining the connections
- > Suitable for pneumatic tools

### Technical data

Item no.	Pressure range [bar]	Operating pressure at 20 °C [bar]	Usage temperature [°C]
61.100	-1 - 7	29	-15 - 60
61.101	-1 - 7	29	-15 - 60
61.102	-1 - 7	29	-15 - 60
61.103	-1 - 7	29	-15 - 60
61.104	-1 - 7	29	-15 - 60
61.105	-1 - 7	29	-15 - 60
61.106	-1 - 7	29	-15 - 60
61.107	-1 - 7	29	-15 - 60
61.108	-1 - 7	29	-15 - 60
61.109	-1 - 7	29	-15 - 60
61.110	-1 - 7	29	-15 - 60
61.135	-1 - 7	29	-15 - 60
61.111	-1 - 7	29	-15 - 60
61.112	-1 - 7	29	-15 - 60
61.113	-1 - 7	29	-15 - 60
61.114	-1 - 7	29	-15 - 60
61.115	-1 - 7	29	-15 - 60
61.116	-1 - 7	29	-15 - 60
61.117	-1 - 7	29	-15 - 60
61.118	-1 - 7	29	-15 - 60
61.119	-1 - 7	29	-15 - 60
61.120	-1 - 7	29	-15 - 60
61.121	-1 - 7	29	-15 - 60
61.122	-1 - 7	29	-15 - 60
61.123	-1 - 7	29	-15 - 60

### Dimensions

A [mm]	ø d [mm]	ø D [mm]	L [mm]
70	3	16	210
150	3	16	450
230	3	16	700
390	3	16	1,200
120	4	24	360
180	4	24	540
350	4	24	1,100
480	4	24	1,500
700	4	24	2,100
1,040	4	24	3,200
1,450	4	24	4,400
90	6	30	270
160	6	30	500
230	6	30	700
430	6	30	1,300
620	6	30	1,900
910	6	30	2,800
1,300	6	30	3,900
1,850	6	30	5,600
250	8	42	750
390	8	42	1,200
540	8	42	1,700
770	8	42	2,400
1,045	8	42	3,200
1,550	8	42	4,700





# Connectors | Tubing

Spiral tubing made of black PUR for vacuum and pressure applications

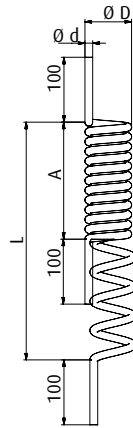
## Technical data

Item no.	Pressure range [bar]	Operating pressure at 20 °C [bar]	Usage temperature [°C]
61.124	-1 - 7	29	-15 - 60
61.125	-1 - 7	29	-15 - 60
61.126	-1 - 7	29	-15 - 60
61.127	-1 - 7	29	-15 - 60
61.128	-1 - 7	29	-15 - 60
61.129	-1 - 7	29	-15 - 60
61.130	-1 - 7	29	-15 - 60
61.131	-1 - 7	29	-15 - 60
61.132	-1 - 7	29	-15 - 60
61.133	-1 - 7	29	-15 - 60

## Dimensions

A [mm]	Ø d [mm]	Ø D [mm]	L [mm]
330	10	58	1,000
470	10	58	1,400
680	10	58	2,100
970	10	58	3,000
1,380	10	58	4,200
310	12	72	1,000
450	12	72	1,400
660	12	72	2,000
920	12	72	2,800
1,320	12	72	4,000

## Dimensions





Tubing nipple with external thread



Ordering notes

> Select the tubing inner diameter about 1 - 2 mm smaller than the tubing nipple

Technical data

Item no.	For hose inner Ø [mm]	Material
62.019	9	Nickel-plated brass
62.020	6	Nickel-plated brass
62.021	8	Nickel-plated brass
62.022	10	Nickel-plated brass
62.023	6	Nickel-plated brass
62.024	8	Nickel-plated brass
62.025	10	Nickel-plated brass
62.026	12	Nickel-plated brass
62.027	16	Nickel-plated brass
62.028	19	Nickel-plated brass
62.029	25	Nickel-plated brass
62.030	10	Nickel-plated brass
62.031	12	Nickel-plated brass
62.033	16	Nickel-plated brass
62.034	18	Nickel-plated brass
62.035	25	Nickel-plated brass
62.036	32	Nickel-plated brass
62.037	38	Nickel-plated brass
62.038	32	Brass
62.040	50	Brass
62.041	50	Brass
62.042	63	Brass
62.045	6	Brass
62.046	9	Brass
62.047	12	Brass
62.048	16	Nickel-plated brass
62.060	14	Nickel-plated brass
62.061	32	Brass
62.062	4	Brass
62.063	6	Brass

Dimensions

G1	Ø D [mm]	SW
G1/8	9	12
G1/8	6	12
G1/8	8	12
G1/8	10	12
G1/4	6	14
G1/4	8	14
G1/4	10	14
G1/4	12	14
G3/4	16	17
G3/4	19	32
G3/4	25	32
G1/2	10	22
G1/2	12	22
G1/2	16	22
G1/2	18	22
G1	25	37
G1 1/4	32	50
G1 1/2	38	55
G1 1/2-male	32	48
G1 1/2-male	50	52
G2-male	50	70
G2 1/2-male	63	80
G3/8-male	6	19
G3/8-male	9	19
G3/8-male	12	19
R3/8-male	16	17
G1/2-male	14	24
G1-male	32	36
M5	4	7
M5	6	7



### Tubing clamps

Material: Steel, galvanised



### Product Description

> Corrosion-proof thanks to the use of galvanised steel

### Technical data

Item no.	Adjustment range of diameter [mm]	Weight [g]
66.010	8 - 12	6
66.011	12 - 22	6
66.015	16 - 27	10
66.017	25 - 40	15
66.019	30 - 43	18
66.020	40 - 60	22



Reinforcing sleeves  
Material: Stainless steel



### Product Description

- > We recommend the use of reinforcing for all soft tubing
- > Reinforced sleeves also recommended for water transportation

### Technical data

Item no.	Hose outer $\varnothing$ [mm]	Hose inner $\varnothing$ [mm]
WR 0425	4	2.5
WR 0640	6	4
WR 0850	8	5
WR 0860	8	6
WR 1065	10	6.5
WR 1075	10	7.5
WR 1280	12	8
WR 1290	12	9
WR 1613	16	13

Tubing cutter with measuring tape



### Technical data

Item no.	Compatible hose diameter [mm]
61.083	3 - 16



Notes:



A large area for notes, featuring a vertical red line on the left and horizontal lines for writing.



### Connector cable M8, M12, 2-5-pin, Material PUR



#### Product Description

> Electric connection e. g. of vacuum switches, sensors or ejectors

#### Technical data

Item no.	Contact	Plug Design	Cable length [mm]	Suitable for
20.550	Plug with plastic housing, 2-pin, open cable	Straight	1,500	Connection of base ejectors with blow-off boost EBA.08H.2-A
20.503	Plug M8, 3-pin, open cable	Straight	2,500	Connection of sensors and sensor grippers
20.504	Plug M8, 3-pin, jack M8, 3-pin	90° elbow	300	Connection of sensors and sensor grippers
20.507	Plug M8, 3-pin, jack M8, 3-pin	90° elbow	2,000	Connection of sensors and sensor grippers
20.570	Plug M8, 3-pin, jack M8, 3-pin	Straight	1,500	Connection of sensors and sensor grippers
20.501	M8, 4-pin, female, open cable	Straight	5,000	Connection of vacuum switches or compact ejectors
20.502	M8, 4-pin, female, open cable	90° elbow	5,000	Connection of vacuum switches or compact ejectors
20.518	M12, 4-pin, female, open cable	Straight	2,000	Connection of vacuum switches or compact ejectors
20.519	M12, 4-pin, female, open cable	90° elbow	2,000	Connection of vacuum switches or compact ejectors
20.508	Plug M12, 5-pin, open cable	90° elbow	2,000	Connection of compact ejectors
20.509	Plug M12, 5-pin, open cable	90° elbow	2,000	Connection of compact ejectors