

# Fluoropolymer Tubing (PFA)

## Inch Size

# TILM Series

Flame resistant (Equivalent to UL-94 Standard V-0)  
**Compatible with the Food Sanitation Law**  
 • Compatible with the test conforming to the Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959.  
**FDA (Food and Drug Administration) Compliant**  
 • Complies with FDA (Food and Drug Administration) §177.1550 dissolution test.

### Series

Size Model			Inch size								
Tubing size			TILM01	TILMB01	TILM05	TILM07	TILM11	TILM13	TILM19	TILM25	TILM32
O.D.	inch		1/8" x 0.086"	1/8" x 1/16"	3/16" x 1/8"	1/4" x 5/32"	3/8" x 1/4"	1/2" x 3/8"	3/4" x 5/8"	1" x 7/8"	1 1/4" x 1 1/16"
	mm		3.18		4.75	6.35	9.53	12.7	19.05	25.4	31.75
I.D.	inch		0.086"	1/16"	1/8"	5/32"	1/4"	3/8"	5/8"	7/8"	1 1/16"
	mm		2.18	1.58	3.15	3.95	6.33	9.5	15.85	22.2	27.95

Length per roll	Color	Symbol	TILM01	TILMB01	TILM05	TILM07	TILM11	TILM13	TILM19	TILM25	TILM32
10 m	Translucent	N	●	●	●	●	●	●	●	●	●
	Red	R	●	●	●	●	●	●	●	●	●
	Blue	BU	●	●	●	●	●	●	●	●	●
	Black	B	●	●	●	●	●	●	●	●	●
	Translucent	N	●	●	●	●	●	●	●	●	●
20 m	Translucent	N	●	●	●	●	●	●	●	●	●
	Translucent	N	●	●	●	●	●	●	●	●	●
50 m	Translucent	N	●	●	●	●	●	●	●	●	●
	Translucent	N	●	●	●	●	●	●	●	●	●
100 m	Translucent	N	●	●	●	●	●	●	●	●	●
	Translucent	N	●	●	●	●	●	●	●	●	●
16 m (50 ft)	Translucent	N	●	●	●	●	●	●	●	●	●
	Translucent	N	●	●	●	●	●	●	●	●	●
33 m (100 ft)	Translucent	N	●	●	●	●	●	●	●	●	●
	Translucent	N	●	●	●	●	●	●	●	●	●
Straight 2 m	Translucent	N	●	●	●	●	●	●	●	●	●
	Translucent	N	●	●	●	●	●	●	●	●	●

Metric O.D. size
3.2

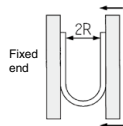
O.D. 5/32" is available in ø4 metric tubing, and O.D. 5/16" is available in ø8 metric tubing. For details, refer to the table "Series" on page 504.

### Specifications

Fluid (Note 1) (2) (3) and applicable fittings (Note 1) (2) (3)	Fluid: Refer to "Applicable Fluid List" on page 512. Fittings: Fluoropolymer fittings LQ series										
	Fluid: Air, Water, Inert gas					Fittings: One-touch fittings KQ2, KQG2, KQB2, Insert fittings KFG2					
Max. operating pressure (MPa)	Refer to the max. operating pressure curve.										
Min. bending radius (mm) (Note 4)	20	10	25	35	60	95	220	400	500		
Operating temperature (fixed usage)	12	6	20	20	30	60	160	290	360		
Material	Air, Inert gas: -65 to 260°C Water: 0 to 100°C (No freezing) PFA (Tetrafluoroethylene perfluoroalkoxy vinyl ether copolymer)										

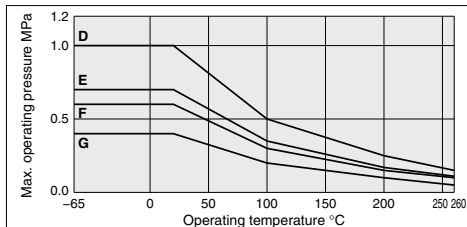
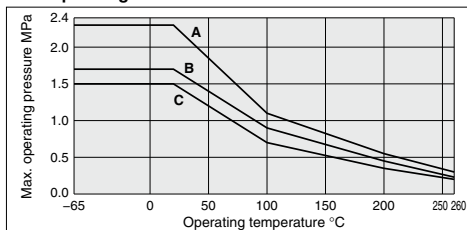
- Note 1) Fluid varies depending on the applicable fittings.  
 Note 2) When using a liquid fluid, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes. Furthermore, abnormal temperature rise caused by adiabatic compression may result in the tube bursting.  
 Note 3) Do not use this product in a manner in which the tube is not fixed. Observe the lesser value of the maximum operating pressure between the tube and fitting. A material change over a long duration or due to high-temperature may cause leakage. Perform periodic maintenance and replace with a new product immediately when abnormalities are detected. (Refer to "Maintenance" of the tubing precautions on page 514.)  
 For other precautions, refer to "Fittings & Tubing Precautions" on pages 13 to 17. When using the fluoropolymer fittings, refer to the precautions on pages 445 and 446.  
 Note 4) Minimum bending radius is measured as shown left as representative values.  
 • Use a tube above the recommended minimum bending radius.  
 • The tube may be bent if used under the recommended minimum bending radius. Therefore, refer to the tube close bend radius and make sure that the tube is not bent or flattened.  
 • Please note that the tube close bend radius is not warranted because of the value when 2R is measured by the method in the right figure if the tube is bent or flattened, etc.  
 • The minimum bending radius shown above does not apply to the straight pipe (2 m).

#### How to measure the minimum bending radius



At a temperature of 20°C, bend the tubing into a U shape. Fix one end and gradually move the other end closer. Measure 2R at the point where the outside diameter's rate of change is 5%.

### Max. Operating Pressure



Group	Model	Max. operating pressure (MPa)			
		20°C or less	100°C	200°C	260°C
A	TILMB01	2.3	1.1	0.55	0.3
B	TILM07	1.7	0.9	0.45	0.23
C	TILM05 TILM11	1.5	0.7	0.35	0.2
D	TILM13 TILM19	1	0.5	0.25	0.15
F	TILM13	0.6	0.3	0.15	0.1
G	TILM25 TILM32	0.4	0.2	0.1	0.05

### How to Order

#### Inch size

**TILM01 N - 20**

Tubing designation

Color indication

Symbol	Color
N	Translucent (Material color)
R	Red (Translucent)
BU	Blue (Translucent)
B	Black (Opaque)

#### Length per roll

Symbol	Type	Length
10	Roll	10 m
20		20 m
50		50 m
100		100 m
16		16 m (50 ft)
33		33 m (100 ft)
2S	Straight	2 m

(Note) Refer to the table "Series" above, as the tubing length differs depending on each size.

KQ2

KQB2

KS  
KX

KM

KF

M

H/DL  
L/L

KC

KK

KK130

DM

KDM

KB

KR

KA

KQG2

KG

KFG2

MS

KKA

KP

LQ

MQR

T

IDK