

# Thermoflon

# BASIC

## High-performance transparent fluoroelastomer tube Thermoflon [Basic]

A hybrid tube that combines the properties of fluororesin and fluororubber.

Flexible, versatile, and excellent in cost performance

<Fields/Applications> Physical and chemical equipment, semiconductor industry, chemical industry, electronic equipment, general industry, etc.

### ■ Characteristics

- **Excellent chemical resistance**  
It has excellent durability against chemicals and
- **Good flexibility**  
It has great features which are not found in fluororesin tubes (PTFE, FEP, PFA, etc.).
- **Perfect transparency**  
It is colorless and transparent with no reinforcing agents such as carbon added.
- **Less pollution due to elution**  
Since it contains no cross-linking agent, stabilizer, or plasticizer, there is almost no risk of elution.
- **No special fitting required**  
Due to the flexible tube, it can be connected with general purpose fittings.
- **Excellent heat resistance**  
The recommended maximum operating temperature is 120°C (however, it differs slightly depending on the operating environment).



Comparison of immersion swelling with reagents (reagent: toluene, room temperature: 23°C). A general silicone tube (left side of the photo) swelled less than 1 hour after starting the test. On the other hand, the thermoflon shows no change.

## ■ General properties of thermoflon

		Thermoflon	General fluorine Rubber tube
Specific gravity		1.89	1.8~2.1
Hardness	JIS A	67	55~90
Melting point	°C	220	—
Thelma decomposition star temperature	°C	380	400 and more
Thermal conductivity	cal/cm sec · °C	3.6×10E-4	6.0×10E-4
Specific Heat	cal/g · °C	0.3	0.3
Low temperature torsion test (T50)	°C	-9	-20~-8
Elongation	%	620	600~150
Tensile test	MPa	15	7~22
Tear strength	kN/m	28	17~25
Compression set 50°C×24h	%	57	5~27
Coefficient of friction		0.6	0.6~0.7
Impact resilience	%	10	10~15
Volume resistivity	Ω · c m	5×10E13	1×10E13
Breakdown voltage	kV/0.15mm	16	9.3
Dielectric constant 23°C	kHz	5.9	13.8

## ■ Food safety (Food Sanitation Law No. 370 test)

Test item	Thermoflon
Lead	Compatible
Cadmium	Compatible
Heavy metal	Not detected
Compatible with potassium permanganate	Compatible

## ■ Standard size

Inner Diam. (mm)	Outer Diam. (mm)
1	3
2	4
3	5
4	6
5	7
6	8
7	10
8	11
9	12

Please contact us for other sizes

## ■ Gas permeability (ASTM D-1434M method)

	N <sub>2</sub>	O <sub>2</sub>	CO <sub>2</sub>	He
Thermoflon	82	136	111	1715
General fluorine Rubber tube	48	144	335	1820

Liquid chemical	Evaluation	Liquid chemical	Evaluation
〈Acid〉		〈Ketone〉	
Hydrochloric acid (35%)	○	Acetone	×
Sulfuric acid (98%)	○	Methyl Ethyl Ketone	×
Nitric acid (70%)	○	〈Carboxylic acid〉	
Phosphoric acid (85%)	○	Acetic acid (glacial acetic acid)	△
〈Alkali〉		〈Ester〉	
Sodium hydroxide (30%)	○	Ethyl Acetate	×
Sodium hypochlorite	○	Proprietary glycol monoethyl ether = acetate	×
〈Hydrocarbon〉		γ-butyrolactan	
N-Hexane	○		△
Cyclohexane	○	〈Chlorine solvent〉	
〈Aromatic〉		Dichloromethane	●
Toluene	○	1,2-dichloroethane	○
Xylene	○	Trichloroethylene	●
〈Alcohol〉		Tetrachloroethylene	○
Methanol	○	〈Amid〉	
Ethanol	○	N,N-dimethylformamide	×
IPA	○	1-methyl-2-pyrrolidone	×
〈Ether〉		〈Other〉	
Diethyl ether	△	Dimethyl sulfoxide	×
Tetrahydrofuran	×	ASTM#2 oil	○
		Gasoline	(*)

◆ Test method: After immersion in each chemical for 7 days at room temperature, change in weight was measured.

○: less than 5%

●: 5% or more and less than 10%

△: 10% or more and less than 20%

×: More than 20% or not recommended.

\*1-Weight change rate is "○" but changes to reddish brown color.

\*The data shown in this catalog are typical values, not guaranteed values. When selecting a tube, be sure to perform a confirmation test on the customer side.

The products described in this catalog are not manufactured for use in medical applications that come into contact with living tissues.

\*The Thermoflon series may change to pink when exposed to light for a long time, but this does not affect the physical properties.

(It is recommended to store it in a cool place out of the sun or cover it with a black bag)