PTFE– Metric Tubing– High Temperature PTFE Sleeving and sleeves to 1501.3000-1.4-2.4

Features & Benefits
Supplied as continuous form or cut pieces to any length.

Performance
Continuous operating temperature: -200°C to +250°C
FDA Compliant: Suitable for food use
Excellent resistance to a wide range of fluids

Standard Colours & Colour Codes

Clear - X
Available to special order

Brown - 1 | Yellow - 4 | Violet - 7
Red - 2 | Green - 5 | Grey - 8
Orange - 3 | Blue - 6 | White - 9
Black - 0

Applications

Hilltop PTFE sleeving and sleeves are manufactured from extruded polytetraflurothylene (PTFE). This particular grade of sleeving is intended for use in applications where very high and low temperatures are involved or where severe contamination from fluids may occur. Available as plain cut sleeves, continuous sleeving. PTFE tubing can be used in a temperature range from –200°C (-392°F) up to 250°C (482°F) in static conditions. It is used in an extremely wide range of applications including Biomedical, Aerospace, Electrical, Electronics, Household Appliances, CPI and Automotive.

Inside Diameter	Wall Thicknes	
mm	mm	ORDERING DESCRIPTION
2mm	1mm	PF2x4NL-X-CLS-50MTRS
3mm	0.5mm	PF3x4NL-X-CLS-50MTRS
4mm	1.0mm	PF4x6NL-X-CLS-50MTRS
5mm	1.5mm	PF5x8NL-X-CLS-50MTRS
6mm	1mm	PF6x8NL-X-CLS-50MTRS
8mm	1mm	PF8x10NL-X-CLS-50MTRS
9mm	1.5mm	PF9x12NL-X-CLS-50MTRS
10mm	1mm	PF10x12NL-X-CLS-50MTRS
12mm	1mm	PF12x14NL-X-CLS-50MTRS

Physical Properties

Property	Test method	Units	Typical values
Density	ASTM D 792	gr/cm^3	2,18
Tensile strength	ASTM D 4895	MPa	25,0
Elongation at break	ASTM D 4895	%	300
Dielecric Stength	ASTM D 149	Kv/mm	50
Dielectric Constant (50. 10 Hz)	ASTM D 150	-	2.10
Dissipation Factor	ASTM D 150	-	‹ 0.0002
Volume Resistivity	ASTM D 257	Ω.cm	10^{17}
Surface Resistivity	ASTM D 257	Ω	10^{15}

Alternative wall thickness and other inside diameters are available subject to special order

PTFE - High Temperature Metric PTFE sleeving.

Pressure Guide at 20 C for PTFE Tube

Metric Range

OD x ID (mm)	Burst	Working	OD x ID (mm)	Burst	Working	OD x ID (mm)	Burst	Working
2 x 1	99	33	8 x 5	72	24	13 x 11	27	9
2.5 x 1.5	78	26	8 x 6	46	15	14 x 11	39	13
3 x 1	132	44	8 x 7	22	7	14 x 12	25	8
3 x 2	63	21	9 x 5	87	29	14.5 x 12.5	24	8
4 x 2	99	33	9 x 6	63	21	15 x 12	36	12
4 x 2.5	72	24	9 x 7	41	14	15 x 13	23	8
4 x 3	46	15	9 x 8	19	6	16 x 13	34	11
4.5 x 3.5	41	14	10 x 6	78	26	16 x 14	22	7
5 x 2	119	40	10 x 7	56	19	17 x 15	21	7
5 x 3	78	26	10 x 8	36	12	18 x 15	30	10
5 x 4	36	12	10 x 8.5	27	9	18 x 16	19	6
6 x 3	99	33	10 x 9	17	6	18.4 x 16.4	19	6
6 x 4	63	21	11 x 8	51	17	19 x 16	28	9
6 x 5	30	10	11 x 9	33	11	19 x 17	18	6
6.4 x 4.4	59	20	11 x 10	16	5	20 x 17	27	9
7 x 4	84	28	12 x 8	63	21	20 x 18	17	6
7 x 5	54	18	12 x 9	46	15	21 x 19	16	5
7 x 6	25	8	12 x 10	30	10	22 x 19	24	8
8 x 4	99	33	13 x 10	42	14	22 x 20	16	5

Effect of Temperature on Pressure resistance

Deg. C	%
23	100
50	50
100	35
150	30
200	10

Minimum bending radius

Minimum bending radius of PTFE Thin Wall Tuving depends on many factors; most important are: dimension, working temperature, applied pressure and pressure fluctuations. Of lesser important is the nature of fluid conveyed
Roughly the minimum bending radius (at 20°C-68°F) depends on OD and wall thickness.
If wall thickness is 1mm it can be considered:
Rmin mm = 9 to 11 times OD mm (value to be increased at the decreasing of wall thickness).
When special configuration are required it is possible to heat the tubing first, followd by bending and cooling it in the required shape.
A metallic malleable insert to avoid the collapse of the walls can be put into the tubing during bending.

PTFE Chemical Resistance

This chart is intended to be used as a general guide only. Since each rating is for ideal conditions, all factors affecting chemical resistance must be considered.

Acetaldehyde	E	Bromine	M	Cresol	E
Acetaldehyde, Sat	E	Bromobenzene	E	Cyclohexane	E
Acetic Acid, 5%	E	Bromoform	E	Decalin	E
Acetic Acid, 50%	E	Butadiene	E	o-Dichlorobenzene	E
Acetone	E	n-Butyl Acetate	E	p-Dichlorobenzene	E
Acetonitrite	E	n-Butyl Alcohol	E	Diethyl Benzene	E
Acrylonitrile	E	sec-Butyl Alcohol	E	Diethyl Ether	E
Adipic Acid	E	tery-Butyl Alcohol	E	Diethyl Ketone	E
Alanine	E	Butyric Acid	E	Diethyl Malonate	E
Allyl Alcohol	E	Calcium Hydroxide, Conc.	E	Diethylene Glycol	E
Aluminium Hydroxide	E	Calcium Hypochlorite, Sat	E	Dimethyl Formamide	E
Aluminium Salts	E	Carbazole	E	Dimethylsulfoxide	E
Amino Acids	E	Calcium Hydroxide, Conc.	E	1,4 Diozane	E
Ammonia	E	Calcium Hypochlorite, Sat	E	Dipropylene Glycol	E
Ammonium Acetate, Sat	E	Carbazole	E	Ether	E
Ammonium Glycolate	E	Carbon Disulfide	E	Ethyl Acetate	E
Ammonium Hydroxide 5%	E	Carbon Tetrachloride	E	Ethyl Alcohol (absolute)	E
Ammonium Hydroxide 30%	E	Cedarwood Oil	E	Ethyl Alcohol 40%	E
Ammonium Oxalate	E	Cellosolve Acetate	E	Ethyl Benzene	E
Ammonium Salts	E	Chlorine, 10% in air	E	Ethyl Benzoate	E
n-Amyl Acetate	E	Chlorine, 10% (moist)	E	Ethyl Butrate	E
Amyl Chloride	E	Chloroacetic Acid	E	Ethyl Chloride	E
Aniline	E	p-Chloroacetophenone	E	Ethyl Cyanaocetate	E
Benzaldehyde	E	Chloroform	E	Ethyl Lactate	E
Benzene	E	Chromic Acid, 10%	E	Ethlene Chloride, Liquid	E
Benzoic Acid, Sat.	E	Chromic Acid, 50%	E	Ethylene Glycol	E
Benzyl Acetate	E	Cinnamon Oil	E	Ethylene Oxide	E
Benzyl Alcohol	E	Citric Acid, 10%	E	Fluorides	E
Fluorine	M	Methyl Ethyl Ketone	E	Silver Acetate	E
Formaldehyde, 10%	E	Methyl Isobutyl Ketone	E	Silver Nitrate	E
Formaldehyde, 40%	E	Methyl Propyl Ketone	E	Sodium Acetate, Salt	E
Formic Acid, 3%	E	Methylene chloride	E	Sodium Hydroxide, 1%	E
Formic Acid, 50%	E	Mineral Oil	E	Sodium Hydroxide 50%-Sat.	E
Formic Acid, 98-100%	E	Nitric Acid, 1-10%	E	Sodium Hypochlorite, 15%	E
Fuel Oil	E	Nitirc Acid, 50%	E	Stearic Acid, Crystals	E
Gasoline	E	nitirc Acid, 70%	E	Sulfuric Acid, 1-6%	E
Glacial Acetic Acid	E	Nitrobenzene	E	Sulfuric Acid, 20%	E
Glycerin	E	n-Octane	E	Sulfuric Acid, 60%	E
n-Heptane	E	Orange Oil	E	Sulfuric Acid, 98%	E
Hexane	E	Ozone	E	Sulfuric Dioxide, Liq, 46psi	E
Hydrochloric Acid, 1-5%	E	Perchloric Acid	M	Sulfuric, wet or dry	E
Hydrochloric Acid, 20%	E	Perchloroethylene	E	Sulfur Salts	E
Hydrochloric Acid, 35%	E	Phenol, Crystals	E	Tartaric Acid	E
Hydrofluoric Acid, 4%	E	Phosphoric Acid, 1-5%	E	Tetrahydrofuran	E
Hydrofluoric Acid, 48%	E	Phosphoric Acid, 85%	E	Thionyl Chloride	E
Hydrogen Peroxide, 3%	E	Pine Oil	E	Toluene	E
Hydrogen Peroxide, 30%	E	Potassium Hydroxide, 1%	E	Tributyl Citrate	E
Hydrogen Peroxide, 90%	E	Potassium Hydroxide, Conc	E	Trichloroethane	E
Isobutyl Alcohol	E	Propane Gas	E	Trichloroethylene	E
Isopropyl Acetate	E	Propylene Glycol	E	Triethylene Glycol	E
Isopropyl Alcohol	E	Propylene Oxide	E	Tripropylene Glycol	E
Isopropyl Benzene	E	Resorcinol, Sat	E	Turpentine	E
Kerosene	E	Resorcinol, 5%	E	Undecyl Alcohol	E
Lactic Acid, 3%	E	Salicylaidehyde	E	Urea	E
Lactic Acid, 85%	E	Salicylic Acid, Powder	E	Vinylidene Chloride	E
Methoxyethyl Oleate	E	Salicylic Acid, Sat.	E	Xylene	E
Methyl Alcohol	E	Salt Solutions, Metallic	E	Zinc Stearate	E

M = Moderate Attack or appreciable absorption. Material will have limited life.
E = Excellent

PF - High Temperature Metric PTFE sleeving.