

# Tubing

## Thermoplastic

Polyethylene

Nylon

Polypropylene

Polyurethane

Clear Vinyl

## Fluoropolymer

PTFE

FEP

PFA





# Table of Contents

## Thermoplastic Tubing

### Introduction

Intro .....	B-4
Tubing Compatibility Chart for Fittings .....	B-8

### PolyethyleneTubing

Fractional – Series E/EB .....	B-12
Metric – Series E/EB .....	B-14
Flame Resistant – Series PEFR .....	B-16
High Density – Series HDPE .....	B-18

### Nylon Tubing

Fractional – Series N/NB .....	B-20
Metric – Series N/NB .....	B-22
Pure Air Tubing – Series PAT .....	B-24
Semi-rigid Tubing – Series NR .....	B-26

### Polypropylene Tubing

Laboratory Grade – Series PP/PPB .....	B-28
--	------

### Polyurethane Tubing

Fractional Polyether Base – Series U .....	B-30
Metric Polyether Base – Series UM .....	B-32
Fractional – Series HU .....	B-34
Metric – Series HUM .....	B-36
MicroWeld™ Flame Resistant - Series 95FR .....	B-38

### Clear Vinyl Tubing

Clear Vinyl Tubing – Series PV .....	B-40
--------------------------------------	------



# Fluoropolymer Tubing

## Introduction

Intro, Material Overview .....	B-44
Resin Comparison.....	B-47
Fluoropolymer Nomenclature .....	B-48

## PTFE Tubing

Fractional – Series 101 .....	B-50
Metric – Series 201 .....	B-50
Fractional – Series TFS, TFT, TFL .....	B-54
AWG – Series TFH, TFS, TFT, TFL.....	B-56
Spiral Cut Cable Wrap, TSWTF .....	B-60
PTFE Fractional Heat Shrink - Series HS2TFS, HS2TFT, HS2TFL, HS2TFI .....	B-62
PTFE AWG 2:1 Heat Shrink - Series HS2TFS, HS2TFT, HS2TFL.....	B-64
PTFE AWG 4:1 Heat Shrink - Series HS4TFI .....	B-68
Convoluted, Convo-Tex® - Series CV.....	B-70
Low Profile, Heavy Wall - Series CVL, CVH .....	B-72
AMS-T-81914/1 and 2 - Series 81914.....	B-74

## FEP Tubing

Fractional – Series 103 .....	B-76
Metric – Series 203 .....	B-76
FEP 1.3:1 Heat Shrink - Series HS1.3FEP.....	B-78
FEP 1.67:1 Heat Shrink - Series HS1.67FEP .....	B-80
FEP Roll Cover - Series HS1.25FEP .....	B-82
Convoluted- Series CV03; AMS-T-81914/3 and 4 - Series 81914.....	B-84
Corrugated - Series CR03.....	B-86
Retractable Coiled Tubing- Series 703 .....	B-88

## PFA Tubing

Fractional – Series 104 .....	B-90
Metric – Series 204 .....	B-90

## High Purity PFA Tubing

Fractional – Series 105 .....	B-92
Metric – Series 205 .....	B-92



# Parflex Tubing Introduction

## Parflex EZ Pack Tubing



### Retail Packaging

EZ Pack 100 foot boxes are now available for Nylon and Polyurethane tubing in some sizes. Designed for easy storage and easy dispensing, these boxes are excellent for retail sales and fulfilling small quantity requirements.

## Parflex Tubing Tutorial

- Review the general attributes of Parflex thermoplastic and fluoropolymer tubing – this provides an excellent overview for the tubing product line.
- Review the application symbols - this will help you clear up any questions you may have on the product tables within the section. The market/applications table identifies and provides a “good fit” summary.
- Review the pressure bar graph - provides relative pressure ratings for the entire line of thermoplastic tubing. For fluoropolymer tubing, please contact Customer Service.
- Review the STAMPED guide (Size, Temperature, Media, Application, Pressure, End Configuration, and Delivery Preferences) on pg. 13 to help narrow your search for the desired product.
- Specific nomenclature, features, advantages and benefits can be found at the beginning page of each product line.
- Text appears in 2 colors. The primary dimensions are in black. As a courtesy, the metric/inch equivalent has been added and appears in blue.



# Tubing Introduction

## Tube Line Fabrication Guide for Leak Free Systems

Every hydraulic, pneumatic and lubrication system requires some form of tube line fabrication and fitting installation for completion. Proper fabrication and installation are essential for the overall efficiency, leak free performance and general appearance of any system.

Start by planning ahead. After sizing the tube lines and selecting the appropriate style of fitting, consider the following in the design of your system:

- Accessibility of joints
- Proper routing of lines
- Adequate tube line supports
- Available fabricating tools

### Routing of Lines

Routing of lines is probably the most difficult, yet most significant, of these system design considerations. Proper routing involves getting a connecting line from one point to another through the most logical path.

Always try to leave fitting joints as accessible as possible. Hard to reach joints are hard to assemble and tighten properly. Inaccessible joints are also more difficult and time consuming to service.

## Applications/Markets



Fluid Handling



Construction



Transportation



Industrial Pneumatic



Electrical



Military



General Industrial



Compressed Gas



Medical



Semiconductor



Food & Beverage



Pharmaceutical



# Multitube® Tubing Introduction

See CAT 4200 for technical information

The Multitube® instrumentation product line has produced thermal insulated and heat traced tubing for over 40 years. Tubing and tubing bundles transfer gas, fluids, steam and viscous materials through instrument lines, condensate return lines, cooling water lines, lubrication lines and refrigeration lines. Some of these products are available with heated elements to ensure maximum freeze protection during the winter. The products displayed on these pages are just a sampling of the types of products available in the Multitube line of products. See Catalog 4200 for a detailed review.

## Applications/Markets



- Chemical Processing
- Refineries
- Oil & Gas
- Power Generation



### MJ - Jacketed Metal Tubing

Bundled tubing is an ideal alternative for applications where multiple lengths of tubing are currently being installed independently. Manufactured with or without protective, galvanized steel armor and a protective outer jacket. Metal tubes are uniquely identified using a number code printed along the entire length of each tube.

MJ - Metal, Jacketed    MA - Metal Armored    MAJ - Metal, Armor, Jacketed



### PJ - Jacketed Plastic Tubing

Bundled tubing is an ideal alternative for applications where multiple lengths of tubing are currently being installed independently. Manufactured with or without protective, galvanized steel armor and a protective outer jacket. Plastic tubes are uniquely identified using a number code printed along the entire length of each tube.

PJ - Plastic, Jacketed    PA - Plastic Armored    PAJ - Plastic, Armor, Jacketed





## TT - Temptube® Preinsulated Tubing

Preinsulated tubing - Transfer of fluids or gases up to 400°F while maintaining an outer jacket surface temperature of 140°F. Insulated bundles rated up to 1200°F. Also available as a custom bundle.

Typically used in steam supply lines, condensate return lines, cooling water lines, lubrication lines, refrigeration lines and liquid nitrogen lines.



## LT - Light Steam Trace

Temtrace® LT - Permits use of higher pressure steam to heat trace instrument lines. Single or multiple tubes designed to utilize saturated steam pressures to 230 PSIG (15.8 BAR) and 400°F without generating a process tube temperature in excess of 200°F or a jacket surface temperature greater than 140°F.



## SL - Self Regulating Low Temperature Maintenance Bundles

Temtrace® SL - Maintain temperatures up to 150°F and withstands maximum internal exposure to 185°F. Designed to provide freeze protection and low temp. maintenance for gases, liquids or viscous materials. With outdoor temperatures of -40°F, SL-Temtrace™ will maintain a process fluid or gas at 40°F to 400°F while maintaining an outer jacket surface temp. of 140°F. Heated cables are available in 120V and 208-277 volt, with heat outputs of 3, 5, 8 and 10 watt/ft.



## SH - Self Regulating High Temperature Maintenance Bundles

Temtrace® SH - Maintain temperatures up to 250°F and withstands an internal exposure temp. of 400°F. Designed to provide temp. maintenance for gases, liquids or other process materials. Has a max. temp. rating of 250°F (121.1°C), when power to the heating cable is on, and can be steam cleaned at 400°F (204°C), when power to the heating cable is off.



For technical information,  
download CAT 4200





# Tubing Compatibility Chart for Fittings

## Tubing Compatibility Chart

Parker Tubing / Hose Capability with Parker FSC Fittings

		Parflex Thermoplastic and Thermo-elastomer Tubing											
		Industrial Tubing Series (Outside Diameter (O.D.) Shown)											
Product Sizes (inch)		Polyethylene E & EB Inch (4.5,6,8,10) Metric (6,8,10,12)	Polyethylene PEFR Inch (2.5,4,6,8)	Polyethylene HDPE Inch (4,6)	Nylon N Inch (2,2.5,3,4,5,6,8)	Nylon PAT Inch (2,4,6,8,10,12)	Nylon NR Inch (2,3,4,5,6,8)	Polypropylene PP & PPB Inch (2,2.5,3,4,6,8,10)	Polyurethane U & UM (90 - 95 Shore A) Inch (2,3,4,6,8,9,12) Metric (4,6,8,10,12)	Polyurethane HU & HUM (>95 Shore A) Inch (2,2.5,4,6,8,12) Metric (4,6,8,10,12)	Polyurethane MicroWeld™ 95FR Inch (4,6,8) Metric (6,8,10,12)	Clear Vinyl Inch (1/8" - 2 1/2")	
Compression & Flare	Compression Inch (2,3,4,5,6,7,8,10,12)	PS TS	PS TS	PS TS	PS TS	PS TS	PS TS	PS TS					
	Compress-Align Inch (2,3,4,5,6,8,10,12,14,16)	TS	TS	TS	TS	TS	TS	TS					
	Metric Compression Metric (4,5,6,8,10,12,14,16,18,20,22,25,28)	TS			TS		TS	TS		TS			
	Poly-Tite Inch (4,5,6,8)				BS			BS					
	Hi-Duty Inch (2,3,4,5,6,8,10)	TS	TS	TS	TS	TS	TS	TS					
	45 degree flare Inch (2,3,4,5,6,8,10,12,14)												
	Inverted Flare Inch (2,3,4,5,6,8,10,12)												
	Fast & Tite Inch (4,5,6,8,10)								TS	TS		TS	
Push-to-Connect	Flow Controls Inch (2,2.5,4,5,6,8) Metric (4,6,8,10,12)												
	Prestolok Brass Inch (2,2.5,3,4,5,6,8)												
	Prestolok Composite Inch (2,2.5,3,4,5,6,8,10) Metric (3,4,6,8,10,12,14,16)												
	Prestolok All-Metal Inch (2.5,4,5,6,8) Metric (4,6,8,10,12,14)												
	Prestolok Stainless Inch (2.5,3,4,5,6,8) Metric (4,6,8,10,12)												
	Liquifit Inch (2.5,4,6,8) Metric (4,6,8,10,12)												
	TrueSeal Inch (4,5,6,8)						MG		TS	TS		TS	
	Par-Barb Inch (2,3,4,5,6,8,10,12,16,20,24) Inside Diameter								CL			CL	
Barb	Dubl-Barb Inch (2,5,4,6,8)												
	Hose Barb Inch (2,3,4,5,6,8,10,12,16) Inside Diameter											CL	
	Garden Hose											CL	
DOT Transportation	NTA Inch (3,4,6,8,10,12)												
	Transmission Fittings Inch (2,2,5)												
	Air Brake Inch (4,6,8,10,12,16)												
	Air Brake Hose Inch (6,8)												
	Vibra-Lok Inch (2,3,4,5,6,8,10,12)												
	Prestomatic Inch (4,6,8,10) Metric (6,8,10,12,16)												
	PTC Inch (2,5,3,4,6,8,10,12)												
General Technical	SAE Cartridges Inch (4,6,8,10)												







# Thermoplastic Tubing

## Polyethylene

- Parflex polyethylene tubing meets FDA, NSF Standard 51 for all food contact applications and NSF-61 for potable water applications.
- E-Series NSF tubing is made of 100% virgin resin material.
- Polyethylene tubing meets ASTM D-1693 (10% IGEPAL) for stress crack resistance.
- Parflex also offers special PE tubing: PEFR (flame retardant) and HDPE (high density).

## Nylon

- Flexible nylon tubing is constructed of high-grade resins for strength and flexibility for routing in tight spaces.
- Semi-rigid high strength nylon is constructed of high-grade resins without the addition of plasticizers for higher pressure tubing applications.
- Pure Air Tubing (PAT) is the tubing choice for pure air systems (semiconductor) due to its cleanliness; in addition, it offers excellent chemical and UV light resistance.

## Polypropylene

- Polypropylene tubing meets FDA, NSF Standard 51 for all food contact applications.
- Polypropylene tubing exhibits excellent chemical resistance to chlorinated water applications.
- Black Polypropylene tubing is commonly used in outdoor applications where UV light stabilization is required.

## Polyurethane

- Polyurethane tubing is a flexible, kink-resistant and abrasion-resistant material commonly used in pneumatic applications.
- Polyurethane is available in multiple transparent and opaque colors for system color coding.
- Weld spatter resistant tubing for air and water supply lines
- Polyurethane is available in the following durometers (measurement of material hardness):
  - Medium durometer: (90 – 95)
  - High durometer: (>95) for higher pressures

## Polyvinyl Chloride (PVC)

- PVC tubing is made from 100% virgin resin material and meets all FDA specifications for materials in contact with food and drugs.
- PVC tubing is a very flexible, 70 durometer tubing. It is crystal-clear and ideal for situations where visible fluid flow is necessary (i.e. sight gauges for tank identification).

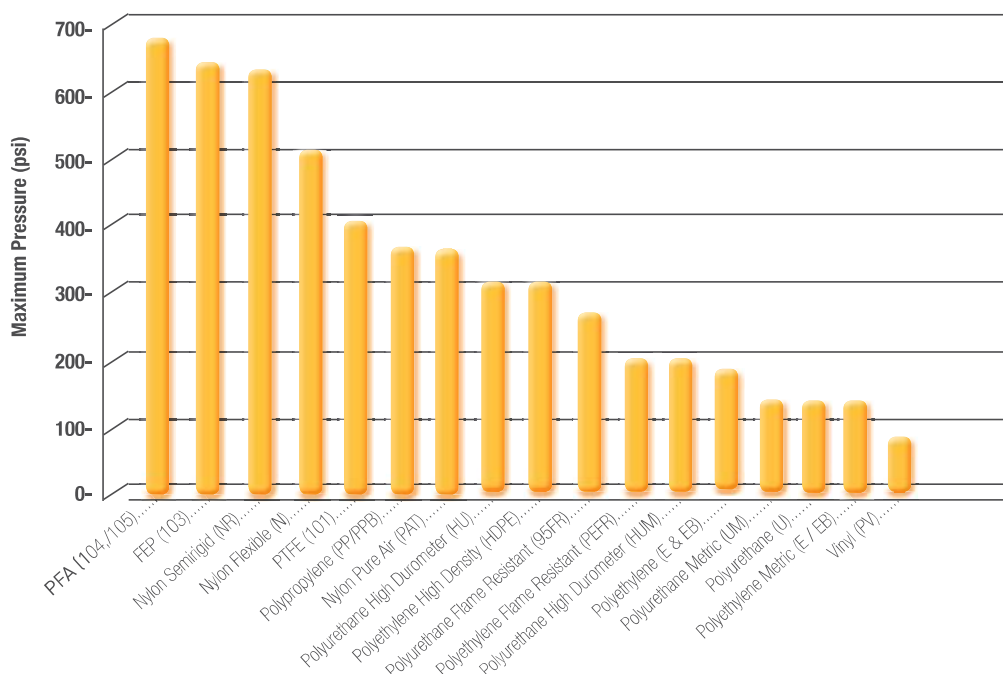
All plastic tubing dimensions are laser monitored to ensure overall quality product.  
Most tubing sizes are packaged in convenient 100-ft., 250-ft., 500-ft. and 1,000-ft. lengths.



## Typical Applications

Product Family	Series	Suggested Markets and Applications
Polyethylene	E and EB	Potable water, chemical transfer, and low-cost, low-pressure pneumatics, NSF-51 & NSF- 61
	PEFR	Pneumatic controls in HVAC
	HDPE	Chemical transfer and low-cost pneumatics
Nylon	N	Pneumatic and petroleum-based chemical transfer
	PAT	Pure air and gas distribution systems, semiconductor
	NR	High pressure pneumatic, low pressure lubrication and hydraulic, marine control systems
Polypropylene	PP and PPB	Food contact and chemical transfer applications, chlorinated water
Urethane	U and UM	Pneumatic controls requiring high flexibility, kink resistance and movement
	HU and HUM	High-pressure pneumatics requiring flexibility and kink resistance, robotics
	95FR	Low to medium pressure air and water supply lines where weld spatter protection is needed
Vinyl	PV	Low-pressure chemical and medical applications requiring high clarity and flexibility, FDA

## Tubing Pressure Ranges



Working pressures are at 73°F (23°C). Pressure ratings are also effected by diameter of tubing and wall thickness. Actual performance may vary with different media and working conditions. Use this information for comparison only.



# Polyethylene Tubing

Series E: Instrument Grade – FDA, NSF Listed

Series EB: Ultraviolet Light Resistant



## Features

- Made from 100% virgin resin material
- Chemically resistant and flexible
- High molecular weight resin provides increased dimensional stability, uniformity and long-term strength
- Economical system solution

## Certifications/Compliance

- FDA compliant for food contact
- ASTM D-1693 (10% IGEPAL) for stress crack resistance
- NSF – 51
- NSF – 61

## Applications/Markets



- Potable water
- Chemical transfer
- Low-pressure pneumatics



Part Number	Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F / 23°C		Minimum Burst at 73°F / 23°C		Package Quantity	Minimum Bend Radius		Weight	
#	#															
Natural	Black	inch	mm	inch	mm	inch	mm	psi	bar	psi	bar		inch	mm	lbs./ft.	kg./mtr.
E-43-XXXX	EB-43-XXXX	1/4	6.4	.170	4.3	.040	1.0	120	8.3	480	33.1	Package quantities vary by size and color	1.00	25.4	.011	.016
E-53-XXXX	EB-53-XXXX	5/16	7.9	.187	4.8	.062	1.6	145	10.0	580	40.0		1.13	28.7	.020	.030
E-64-XXXX	EB-64-XXXX	3/8	9.5	.250	6.4	.062	1.6	125	8.6	500	34.5		1.25	31.8	.025	.037
E-86-XXXX	EB-86-XXXX	1/2	12.7	.375	9.5	.062	1.6	90	6.2	360	24.8		2.50	63.5	.034	.051
E-108-XXXX	EB-108-XXXX	5/8	15.9	.500	12.7	.062	1.6	70	4.8	280	19.3		4.00	101.6	.044	.065

Standard black is not FDA or NSF approved.



### WARNING

This product can expose you to chemicals including Titanium dioxide, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Order Information

### Example: E-64-Y-0500

**E-64-Y-0500 – Polyethylene**

E-**64**-Y-0500 – **Tube O.D.** in sixteenths of an inch (**3/8"**)

E-**64**-Y-0500 – **Tube I.D.** in sixteenths of an inch (**.250"**)

E-64-**Y**-0500 – **Color**, i.e. **Yellow** (Omit for Natural and Black)

**E**-64-0500 – Natural Polyethylene

**EB**-64-0500 – Black Polyethylene

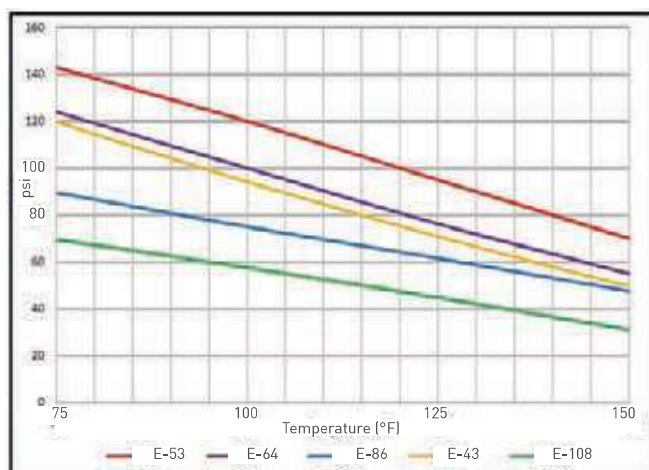
E-64-Y-**0500** – **Package Quantity** in feet (**500'**)

Available in black as well as nine other colors, as suggested by the Instrument Society of America

Color Code		
	-	Natural
	-	Black
	B	Blue
	G	Green
	O	Orange
	P	Purple
	R	Red
	GRA	Gray
	Y	Yellow
	WHT	White

## Polyethylene Tubing (Series E)

### Maximum Working Pressure (psig)



#### WARNING

This product can expose you to chemicals including Titanium dioxide, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Compression
- Compress-Align®
- Poly-Tite
- Hi-Duty
- Fast & Tite
- Flow Controls
- Prestolok Brass
- Prestolok Composite
- Prestolok Stainless
- Prestolok All-Metal
- Liquifit
- TrueSeal™
- Dubl-Barb®

For tube support use, reference Tubing/Fitting Compatibility Chart (pg. B-8/B-9) or contact Fluid System Connectors Division (269) 692-6555.

## Notes

- E series natural and colored tubing meet FDA, NSF-51 requirements for food contact applications and NSF-61 for potable water
- FDA, NSF-51 and NSF-61 compliant black polyethylene tubing is also available. Add -NSF suffix to the EB part number (ie. EB-64-0500-NSF)
- Resistant to environmental stress cracking exceeding that of ordinary polyethylene tubing as measured by ASTM D-1693 (10% IGEPAL)
- Black (EB) tubing is suggested for use in sunlit areas and in close proximity to high ultraviolet light sources
- All tubing conforms to ASTM D-1248, Type I, Class A, Category 4, Grade E5
- The operating temperature range for service at rated pressures with compatible fluids is -80°F (-62°C) to +150°F (66°C)

## Colors

- See Color Code Table







## Order Information

### Example: E-8x1-0100

**E-8x1-0100 – Metric Polyethylene (Natural)**

**EB-8x1-0100 – Metric Polyethylene (Black)**

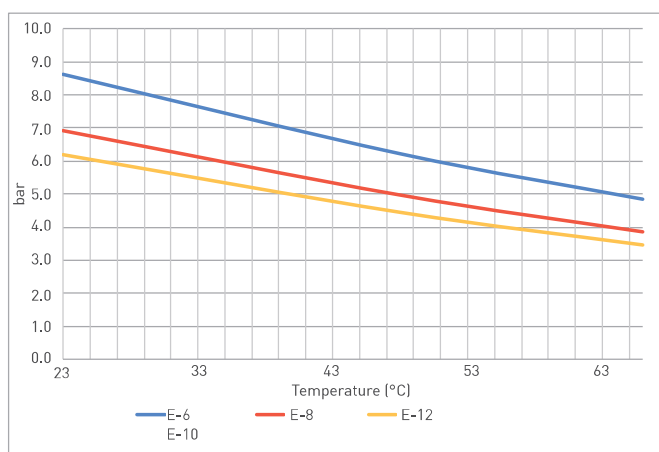
**E-8x1-0100 – Tube O.D. in millimeters (8 mm)**

**E-8x1-0100 – Tube Wall Thickness in millimeters (1 mm)**

**E-8x1-0100 – Package Quantity in feet (100')**

## Metric Polyethylene Tubing (Series E)

### Maximum Working Pressure (bar)



## Fitting Recommendations

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Compression Metric
- Flow Controls
- Prestolok Composite
- Prestolok All-Metal
- Prestolok Stainless
- Liquifit

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9) or  
contact Fluid System Connectors Division  
(269) 692-6555.

## Notes

- E series natural tubing listed below meet FDA, NSF-51 requirements for food contact applications and NSF-61 for potable water
- FDA, NSF-51 and NSF-61 compliant black polyethylene tubing is also available. Add -NSF suffix to the EB part number (ie. EB-64-0500-NSF)
- Resistant to environmental stress cracking exceeding that of ordinary polyethylene tubing as measured by ASTM D-1693 (10% IGEPAL)
- Black (EB) tubing is suggested for use in sunlit areas and in close proximity to high ultraviolet light sources
- All tubing conforms to ASTM D-1248, Type I, Class A, Category 4, Grade E5
- The operating temperature range for service at rated pressures with compatible fluids is -85°F (-65°C) to +150°F (66°C)

## Colors

- Natural
- Black



### WARNING

This product can expose you to chemicals including Titanium dioxide, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).







## Order Information

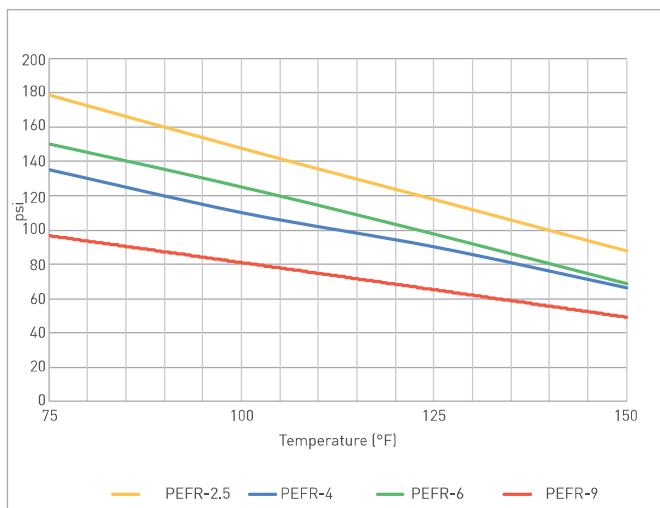
### Example: PEFR-4-0500

**PEFR-4-0500 – Flame Resistant Polyethylene**

PEFR-4-0500 – **Tube O.D.** in sixteenths of an inch (**1/4"**)

PEFR-4-**0500** – **Package Quantity** in feet (**500'**)

## Flame Resistant Polyethylene Tubing (Series PEFR) Maximum Working Pressure (psig)



### WARNING

This product can expose you to chemicals including Antimony Oxide (Antimony Trioxide), which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

- FSC Product Families:
- Compression
- Compress-Align
- Hi-Duty
- Fast & Tite®
- Prestolok® Brass
- Dubl-Barb®

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9) or  
contact Fluid System Connectors Division  
(269) 692-6555.

## Notes

Using the same base linear low-density  
polyethylene (LLDPE) as the E-Series tubing,  
Parker Hannifin, Parflex Division's PEFR  
tubing has the following advantages:

- Resistant to environmental stress  
cracking exceeding that of ordinary  
polyethylene tubing as measured by  
ASTM D-1693 (10% IGEPAL)
- The operating temperature range for  
service at rated pressures with compatible  
fluids is -85°F (-65°C) to +150°F (66°C)

## Colors

- Black







## Order Information

### Example: HDPE-43-0500

#### HDPE-43-0500 – High Density Polyethylene

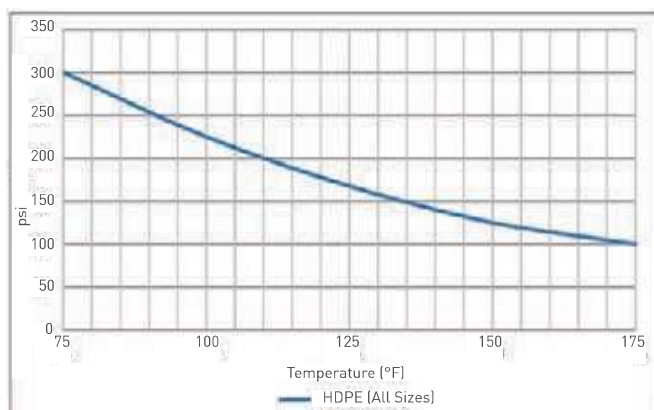
HDPE-43-0500 – **Tube O.D.** in sixteenths of an inch (**1/4"**)

HDPE-43-0500 – **Tube I.D.** in sixteenths of an inch (**.170"**)

HDPE-43-0500 – **Package Quantity** in feet (**500'**)

## High Density Polyethylene Tubing (Series HDPE)

### Maximum Working Pressure (psig)



#### WARNING

This product can expose you to chemicals including Titanium dioxide, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

- Compression
- Compress-Align
- Hi-Duty
- Fast & Tite®
- Prestolok® Brass
- Dubl-Barb®

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9) or  
contact Fluid System Connectors Division  
(269) 692-6555.

## Notes

- Recommended operating temperature range  
for service at rated pressures with compatible  
fluids is -80°F (-62°C) to +175°F (80°C)

## Colors

- Black



# Nylon Tubing

## Series N: Flexible



### Features

- Flexible nylon tubing uses high-grade resins for strength and flexibility for routing in tight spaces
- Made from abrasion-resistant, heat and light-stabilized nylon
- Exhibits low-level water absorption
- Chemically resistant



Contact Customer Service for Retail Packaging Options

EZ Pack 100 foot boxes available for some sizes.

### Applications/Markets



- Robotics
- Machine tool
- General pneumatics
- Lubrication

- Petroleum-based chemical transfer
- Pest control lines



Part Number	Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F / 23°C		Minimum Burst at 73°F / 23°C		Package Quantity	Minimum Bend Radius		Weight	
#	#															
Natural	Black	inch	mm	inch	mm	inch	mm	psi	bar	psi	bar		inch	mm	lbs./ft.	kg./mtr.
NN-2-016	NB-2-016	1/8	3.2	.093	2.4	.016	0.41	250	17.2	1000	69.0	Package quantities vary by size and color	.25	4.6	.003	.004
NN-2-031	NB-2-031	1/8	3.2	.064	1.6	.031	0.79	500	34.5	2000	137.9		.25	4.6	.004	.006
NN-2.5-025	NB-2.5-025	5/32	4.0	.106	2.7	.025	0.64	300	20.7	1200	82.7		.50	12.7	.005	.007
NN-3-025	NB-3-025	3/16	4.8	.138	3.5	.025	0.64	250	17.2	1000	69.0		.63	16.0	.006	.009
NN-3-046	NB-3-046	3/16	4.8	.096	2.4	.046	1.2	500	34.5	2000	137.9		.44	11.2	.009	.013
NN-4-035	NB-4-035	1/4	6.4	.180	4.6	.035	0.89	250	17.2	1000	69.0		.88	22.4	.011	.016
NN-4-040	NB-4-040	1/4	6.4	.170	4.3	.040	1.0	310	21.4	1250	86.2		.88	22.4	.012	.018
NN-4-062	NB-4-062	1/4	6.4	.127	3.2	.062	1.6	500	34.5	2000	137.9		.50	12.7	.017	.025
NN-5-040	NB-5-040	5/16	7.9	.233	5.9	.040	1.0	250	17.2	1000	69.0		1.13	28.7	.016	.024
NN-6-050	NB-6-050	3/8	9.5	.275	7.0	.050	1.3	250	17.2	1000	69.0		1.13	28.7	.023	.034
NN-6-093	NB-6-093	3/8	9.5	.190	4.8	.093	2.4	500	34.5	2000	137.9		.75	19.0	.038	.057
NN-8-062	NB-8-062	1/2	12.7	.375	9.5	.062	1.6	250	17.2	1000	69.0		1.25	31.8	.039	.058
NN-8-124	NB-8-124	1/2	12.7	.253	6.4	.124	3.2	500	34.5	2000	137.9		1.00	25.4	.067	.100



#### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Order Information

### Example: N-2-016-RED-0100

**N-2-016-RED-0100 – Nylon**

**N-2-016-RED-0100 – Tube O.D.** in sixteenths of an inch (**1/8"**)

**N-2-016-RED-0100 – Wall Thickness** in inches (**.016"**)



**N-2-016-RED-0100 – Colors** (Omit for Natural and Black)

**NN**-2-016-0100 - Natural Nylon

**NB**-2-016-0100 - Black Nylon

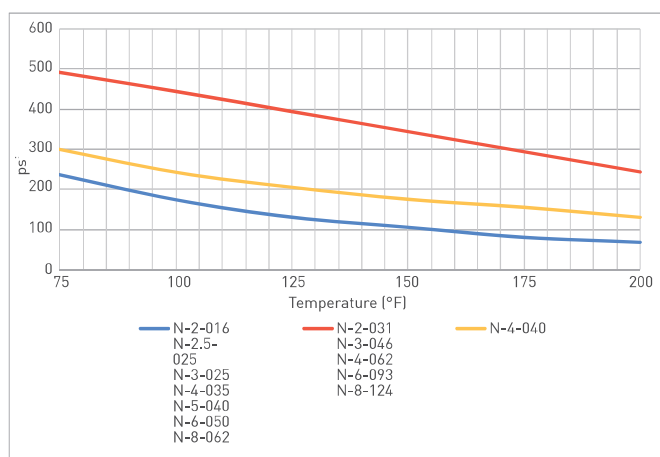
**N-2-016-RED-0100 – Package Quantity** in feet (**100'**)

(Omit quantity number after color for 250' reel length)

Color Code		
	NN	Natural
	NB	Black
	BLU	Blue
	GRN	Green
	RED	Red
	YEL	Yellow

## Nylon Tubing (Series N)

### Maximum Working Pressure (psig)



#### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Compression
- Compress-Align®
- Poly-Tite
- Hi-Duty
- Fast & Tite
- Flow Controls
- Prestolok Brass
- Prestolok Composite
- Prestolok All-Metal
- Prestolok Stainless
- TrueSeal™
- NTA®
- Transmission

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9) or  
contact Fluid System Connectors Division  
(269) 692-6555.

## Notes

- The operating temperature range for service at rated pressures with compatible fluids, depending upon conditions, is -65°F (-54°C) to +200°F (93°C)
- Black tubing suggested for use in sunlit areas and in close proximity to high ultraviolet light sources

## Colors

- See Color Code Table



# Metric Nylon Tubing

## Series N: Flexible

## Series N: Flexible



## Features








- Flexible nylon tubing uses high-grade resins for strength and flexibility for routing in tight spaces
- Made from abrasion-resistant, heat and light-stabilized nylon
- Exhibits low-level water absorption
- Chemically resistant

## Applications/Markets



- Robotics
- Machine tool
- General pneumatics
- Lubrication
- Petroleum-based chemical transfer
- Pest control lines



Part Number	Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F /23°C		Minimum Burst at 73°F /23°C		Package Quantity	Minimum Bend Radius		Weight	
#	#															
Natural	Black	mm	inch	mm	inch	mm	inch	bar	psi	bar	psi		mm	inch	kg./mtr.	lbs./ft.
NN4X.65	NB4X.65	4	.157	2.7	.107	0.65	.026	20.7	300	82.7	1200	100	14	0.55	.007	.005
NN6X1	NB6X1	6	.236	4.0	.157	1.00	.039	23.5	341	94	1363	100	22	0.87	.016	.011
NN8X1	NB8X1	8	.315	6.0	.236	1.00	.039	17.0	247	68	986	100	29	1.14	.024	.016
NN10X1	NB10X1	10	.393	8.0	.315	1.00	.039	12.5	181	50	725	100	34	1.34	.030	.020
NN12X1	NB12X1	12	.472	10.0	.393	1.00	.039	11.0	160	44	638	100	45	1.77	.036	.024
NN14X1.5	NB14X1.5	14	.551	11.0	.433	1.50	.059	15.0	218	60	870	100	57	2.24	.063	.042
NN16X1.5	NB16X1.5	16	.630	13.0	.512	1.50	.059	12.5	181	50	725	100	74	2.91	.073	.049
NN18X1.5	NB18X1.5	18	.709	15.0	.591	1.50	.059	10.5	152	42	609	100	92	3.62	.082	.055
NN20X1.5	NB20X1.5	20	.787	17.0	.669	1.50	.059	9.5	138	38	551	100	112	4.41	.092	.062



## WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Order Information

**Example: NN4x.65**

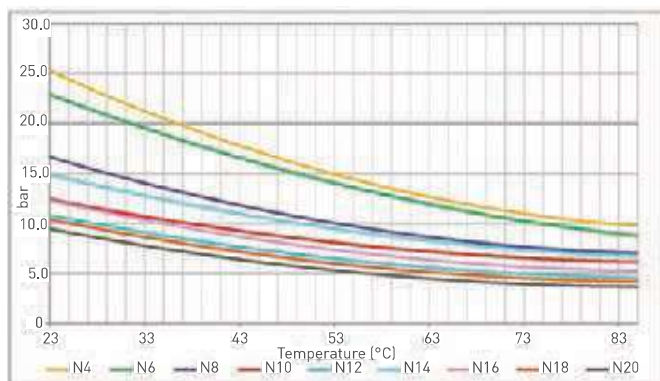
**NN4x.65 – Natural Nylon**

**NN4x.65 – Tube O.D. in millimeters (4mm)**

**NN4x.65 – Wall Thickness in millimeters (0.65mm)**

## Metric Nylon Tubing (Series N)

**Maximum Working Pressure (bar)**



### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Metric Compression
- Flow Controls
- Prestolok Composite
- Prestolok All-Metal
- Prestolok Stainless

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9)  
or contact Fluid System Connectors  
Division (269) 692-6555.

## Notes

- The operating temperature range for service at rated pressures with compatible fluids, depending upon conditions, is -65°F (-54°C) to +200°F (93°C)
- Black tubing suggested for use in sunlit areas and in close proximity to high ultraviolet light sources

## Colors

○ Natural

● Black



# Nylon Pure Air Tubing

## Series PAT: Ultra Pure, UV Resistant



### Features

- The tubing choice for pure air systems (semiconductor) due to its cleanliness and excellent chemical and UV light resistance
- Maintains good resistance to high ambient temperatures with low moisture absorption
- Manufactured from a specially formulated nylon for use in pure air and gas distribution systems
- Provides high tensile strength with excellent coupling retention in high pressure, temperature and vibration environments
- Sizes -2 and -4 are single wall tubing construction
- Sizes -6 through -12 are reinforced tubing construction

### Applications/Markets



- Pure air and gas distribution systems
- Semi-conductor



Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F / 23°C		Minimum Burst at 73°F / 23°C		Package Quantity	Minimum Bend Radius		Weight	
#															
	inch	mm	inch	mm	inch	mm	psi	bar	psi	bar		inch	mm	lbs./ft.	kg./mtr.
PAT2	1/8	3.2	.079	2.0	.023	0.58	250	17.2	1000	69.0	Package quantities vary by size and color	.37	9.4	.004	.006
PAT4	1/4	6.4	.170	4.3	.040	1.0	300	20.7	1200	82.7		1.00	25.4	.012	.018
PAT6	3/8	9.5	.251	6.4	.062	1.6	350	24.1	1400	96.4		1.50	38.1	.028	.042
PAT8	1/2	12.7	.376	9.6	.062	1.6	235	16.2	950	65.5		2.00	50.8	.040	.00
PAT10	5/8	15.9	.441	11.2	.092	2.3	225	15.5	900	62.1		2.50	63.5	.070	.104
PAT12	3/4	19.1	.566	14.4	.092	2.3	200	13.8	800	55.2		3.00	76.2	.087	.129



#### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Order Information

### Example: PAT4-BLK-0250

**PAT4-BLK-0250 – Pure Air Tubing**

**PAT4-BLK-0250 – Tube O.D.** in sixteenths of an inch (**1/4"**)

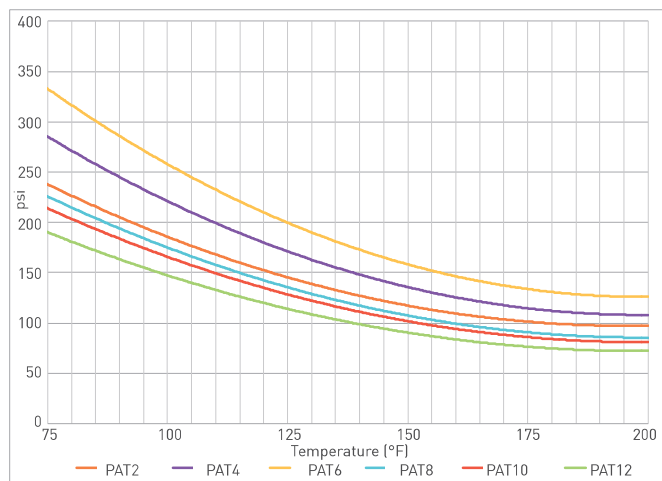
**PAT4-BLK-0250 – Color (Black)**

**PAT4-BLK-0250 – Package Quantity** in feet (**250'**)

Color Code		
●	BLK	Black
●	BRN	Brown
●	SIL	Silver

## Pure Air Nylon Tubing (Series PAT)

### Maximum Working Pressure (psig)



#### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Compression
- Compress-Align®
- Hi-Duty
- Fast & Tite
- NTA®

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9) or  
contact Fluid System Connectors Division  
(269) 692-6555.

## Notes

- Packaged on corrugated plastic reel with ends capped and shipped in a plastic-lined container
- The operating temperature range for service at rated pressures with compatible fluids is -70°F (-57°C) to +200°F (93°C)
- PAT tubing is rated for full vacuum service at 28 inch Hg

## Colors

- See Color Code Table



# Nylon Tubing

## Series NR: Semi-rigid High Strength



### Features

- High grade nylon resins without the addition of plasticizers for higher pressure tubing applications
- Chemical resistant, good resistance to high ambient temperature and low moisture absorption
- High tensile strength and excellent coupling retention in high pressure, temperature and vibration environments
- Better dimensional stability at elevated temperatures than N Series

### Applications/Markets



- High-pressure pneumatics
- Lubrication systems
- Marine control systems
- Process lines for chemicals and oils



Part Number	Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F / 23°C		Minimum Burst at 73°F / 23°C		Package Quantity	Minimum Bend Radius		Weight	
#	#															
Natural	Black	inch	mm	inch	mm	inch	mm	psi	bar	psi	bar		inch	mm	lbs./ft.	kg./mtr.
NNR-2-017	NBR-2-017	1/8	3.2	.091	2.3	.017	0.43	425	29.3	1700	117.2	Package quantities vary by size and color	.50	12.7	.003	.004
NNR-2-026	NBR-2-026	1/8	3.2	.073	1.9	.026	0.66	625	43.1	2500	172.4		.38	9.7	.004	.006
NNR-3-024	NBR-3-024	3/16	4.8	.140	3.6	.024	0.61	425	29.3	1700	117.2		.75	19.0	.006	.009
NNR-3-039	NBR-3-039	3/16	4.8	.110	2.8	.039	0.99	625	43.1	2500	172.4		.63	16.0	.008	.012
NNR-4-035	NBR-4-035	1/4	6.4	.180	4.6	.035	0.89	425	29.3	1700	117.2		1.00	25.4	.011	.016
NNR-4-050	NBR-4-050	1/4	6.4	.150	3.9	.050	1.3	625	43.1	2500	172.4		.88	22.3	.014	.021
NNR-5-040	NBR-5-040	5/16	7.9	.233	5.9	.040	1.0	425	29.3	1700	117.2		1.50	38.1	.015	.022
NNR-6-048	NBR-6-048	3/8	9.5	.279	7.1	.048	1.2	425	29.3	1700	117.2		1.75	44.5	.022	.033
NNR-6-075	NBR-6-075	3/8	9.5	.225	5.7	.075	1.9	625	43.1	2500	172.4		1.50	38.1	.032	.048
NNR-8-062	NBR-8-062	1/2	12.7	.375	9.5	.062	1.6	375	26	1500	103.4		2.38	60.5	.038	.057
NNR-8-075	NBR-8-075	1/2	12.7	.350	8.9	.075	1.9	625	43.1	2500	172.4		2.50	63.5	.045	.067



#### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Order Information

### Example: NBR-2-017-0100

NBR-2-017-0100 – **Nylon**

NBR-2-017-0100 – **Color** (Black)

NBR-2-017-0100 – **Rigid**

NBR-2-017-0100 – **Tube O.D.** in sixteenths of an inch (**1/8"**)

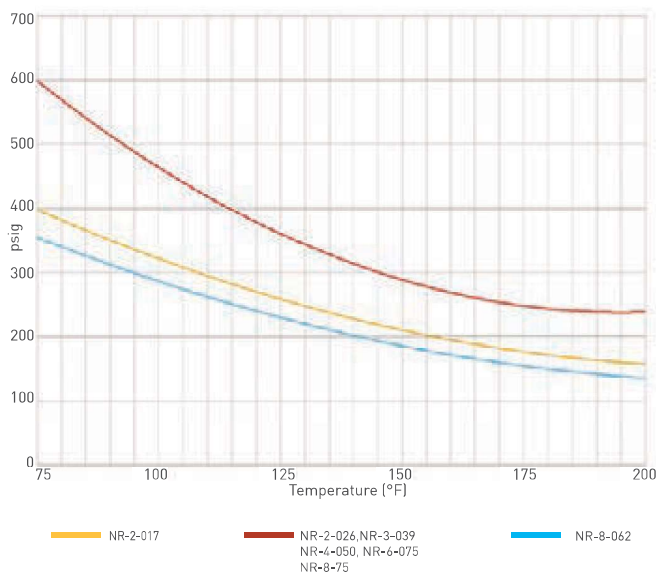
NBR-2-**017**-0100 – **Wall Thickness** in inches (**.017"**)

NBR-2-017-**0100** – **Package Quantity** in feet (**100'**)

(Omit for other package quantities)

## Semi-rigid Nylon Tubing (Series NR)

### Maximum Working Pressure (psig)



#### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Compress-Align®
- Compression
- Fast & Tite®
- Flow Controls
- Hi-Duty
- Prestolok® All-Metal
- Prestolok® Brass
- Prestolok® Composite
- Prestolok® Stainless
- TrueSeal™

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9) or  
contact Fluid System Connectors Division  
(269) 692-6555.

## Notes

- The operating temperature range for service at rated pressures with compatible fluids is -60°F (-51°C) to +200°F (93°C)

## Colors

- Natural
- Black



# Polypropylene Tubing

Series PP: Laboratory Grade – FDA, NSF Listed

Series PPB: Ultraviolet Light Resistant



## Features

- Acid and chemically resistant
- May be used in higher temperatures and working pressures than polyethylene tubing
- Excellent compatibility with high temperature water
- Low water absorption (less than .01%)
- Good compatibility with vegetable oils
- Excellent resistance to environmental stress cracking

## Certifications/Compliance

- FDA and NSF-51 - White tubing only

## Applications/Markets



- Food contact - White only
- Chemical transfer
- Chlorinated water



Part Number	Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F / 23°C		Minimum Burst at 73°F / 23°C		Package Quantity	Minimum Bend Radius		Weight	
#	#															
White	Black	inch	mm	inch	mm	inch	mm	psi	bar	psi	bar		inch	mm	lbs./ft.	kg./mtr.
PP-21-1000	PPB-21-1000	1/8	3.2	.079	2.0	.023	0.58	350	24.1	1400	96.4	Package quantities vary by size and color	.50	12.7	.003	.004
PP-32-0500	PPB-32-0500	3/16	4.8	.120	3.1	.034	0.86	350	24.1	1400	96.4		.75	14.4	.006	.009
PP-43-0500	PPB-43-0500	1/4	6.4	.170	4.3	.040	1.0	300	20.7	1200	82.7		1.00	25.4	.010	.015
PP-53-0500	PPB-53-0500	5/16	7.9	.188	4.8	.062	1.6	350	24.1	1400	96.4		1.25	31.8	.019	.028
PP-64-0500	PPB-64-0500	3/8	9.5	.250	6.4	.062	1.6	300	20.7	1200	82.7		1.25	31.8	.024	.036
PP-86-0250	PPB-86-0250	1/2	12.7	.375	9.5	.062	1.6	225	15.5	900	62.1		2.50	63.5	.033	.049
PP-108-0100	PPB-108-0100	5/8	15.9	.500	12.7	.062	1.6	175	12.1	700	48.3		4.00	101.6	.042	.063

Standard black is not FDA or NSF approved.



### WARNING

This product can expose you to chemicals including Titanium dioxide, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Order Information

### Example: PP-86-0250

**PP-86-0250 – Polypropylene**

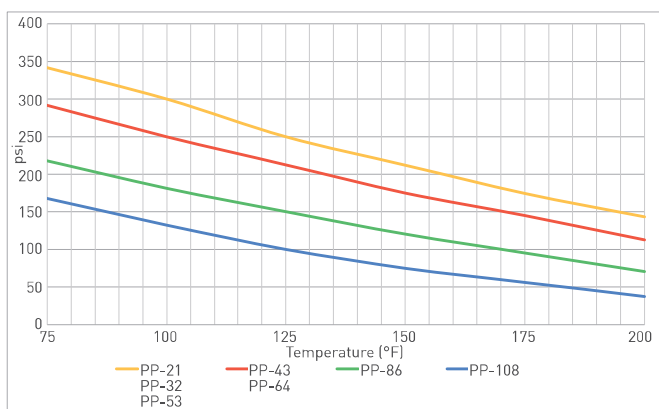
PP-**86**-0250 – **Tube O.D.** in sixteenths of an inch (**1/2"**)

PP-**86**-0250 – **Tube I.D.** in sixteenths of an inch (**.375"**)

PP-86-**0250** – **Package Quantity** in feet (**250'**)

## Polypropylene Tubing (Series PP & PPB)

### Maximum Working Pressure (psig)



#### WARNING

This product can expose you to chemicals including Titanium dioxide, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Compression
- Compress-Align®
- Poly-Tite
- Hi-Duty
- Fast & Tite
- Prestolok Brass
- TrueSeal™

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9) or  
contact Fluid System Connectors Division  
(269) 692-6555.

## Notes

- The operating temperature range for service at rated pressures with compatible fluids is 0°F (-18°C) to +200°F (93°C)

## Colors

○ White

● Black



# Polyurethane Tubing

## Series U: Polyether Base



## Features








- 90 to 95 Shore A durometer
- Excellent kink and abrasion resistance
- Excellent hydrolytic stability
- Flexible and easy to assemble onto designated Fittings
- Polyurethane tubing exhibits the elongation and recovery characteristics of rubber and the chemical resistance associated with plastics

## Applications/Markets



- Pneumatic controls
- Robotics
- Machine tools
- General pneumatics
- Vacuum equipment
- Semiconductor equipment



Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F / 23°C		Minimum Burst at 73°F / 23°C		Package Quantity	Weight	
#													
Natural	inch	mm	inch	mm	inch	mm	psi	bar	psi	bar		lbs./ft.	kg./mtr.
U-21-XXXX	1/8	3.2	.063	1.6	.031	0.79	125	8.6	375	25.9	Package quantities vary by size and color	.005	.007
U-32-XXXX	3/16	4.8	.125	3.2	.031	0.79	125	8.6	375	25.9		.008	.012
U-42-XXXX	1/4	6.4	.125	3.2	.063	1.6	125	8.6	375	25.9		.018	.027
U-64-XXXX	3/8	9.5	.250	6.4	.063	1.6	125	8.6	375	25.9		.030	.045
U-85-XXXX	1/2	12.7	.328	8.3	.086	2.2	125	8.6	375	25.9		.044	.065
U-86-XXXX	1/2	12.7	.375	9.5	.063	1.6	85	5.9	255	17.6		.042	.063
U-96-XXXX	9/16	14.3	.375	9.5	.094	2.4	125	8.6	375	25.9		.068	.101
U-128-XXXX	3/4	19.1	.500	12.7	.125	3.2	125	8.6	375	25.9		.120	.179

**Also available in coils**



Contact Customer Service for  
Retail Packaging Options

EZ Pack 100 foot boxes  
available for some sizes.



## WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Order Information

### Example: U-21-BLK-0500

U-21-BLK-0500 – Polyurethane






U-21-BLK-0500 – Tube O.D. in sixteenths of an inch (1/8")

U-21-BLK-0500 – Tube I.D. in sixteenths of an inch (.063")

U-21-BLK-0500 – Color (Black) (Omit for Natural)

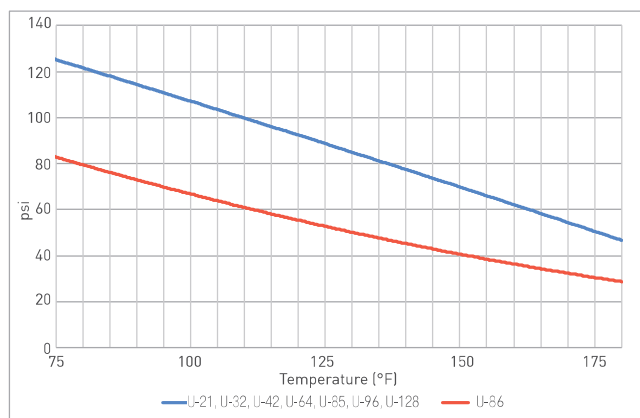
U-21-BLK-0500 – Package Quantity in feet (500')

Opaque Color Code		
	-	Natural
	BLK	Black
	BLU	Blue
	GRA	Gray
	GRN	Green
	ORG	Orange
	RED	Red
	WHT	White
	YEL	Yellow

Transparent Color Code		
	TBLU	Transparent Blue
	TGRN	Transparent Green
	TORG	Transparent Orange
	TRED	Transparent Red
	TYEL	Transparent Yellow

## Polyurethane Tubing (Series U)

### Maximum Working Pressure (psig)



#### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Fast & Tite
- TrueSeal™
- Par-Barb®

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9) or  
contact Fluid System Connectors Division  
(269) 692-6555.

## Notes

- The operating temperature range for service at rated pressures with compatible fluids is -40°F (-40°C) to +180°F (82°C)

## Colors

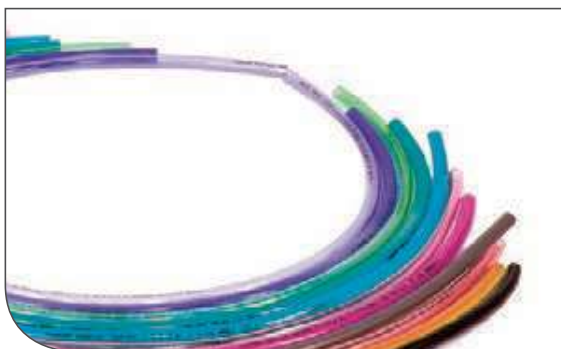
- See Color Code Table



# Metric Polyurethane Tubing

## Series UM: Polyether Base

## Series UM: Polyether Base



## Features








- 90 to 95 Shore A durometer
- Excellent kink and abrasion resistance
- Excellent hydrolytic stability
- Flexible and easy to assemble onto designated Fittings
- Polyurethane tubing exhibits the elongation and recovery characteristics of rubber and the chemical resistance associated with plastics

## Applications/Markets



- Pneumatic controls
- Robotics
- Machine tools
- General pneumatics
- Vacuum equipment
- Semiconductor equipment



Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F /23°C		Minimum Burst at 73°F /23°C		Package Quantity	Weight	
#													
Natural	mm	inch	mm	inch	mm	inch	bar	psi	bar	psi		kg./mtr.	lbs./ft.
UM4x2.5-XXXX	4	.157	2.5	.098	0.75	.030	9.0	131	26.0	377	Package quantities vary by size and color	.009	.006
UM6x4-XXXX	6	.236	4.0	.157	1.00	.039	9.0	131	26.0	377		.018	.012
UM8x5-XXXX	8	.315	5.0	.196	1.50	.059	9.0	131	26.0	377		.036	.024
UM10x6.5-XXXX	10	.393	6.5	.256	1.75	.069	9.0	131	26.0	377		.053	.036
UM12x8-XXXX	12	.472	8.0	.315	2.00	.079	9.0	131	26.0	377		.073	.049



## WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Order Information

**Example: UM6x4-BLK-0100**

**UM6X4-BLK-0100 – Polyurethane Metric**

UM6X4-BLK-0100 – **Tube O.D.** in millimeters (**6 mm**)

UM6X**4**-BLK-0100 – **Tube I.D.** in millimeters (**4 mm**)

UM6X4-**BLK**-0100 – **Color (Black)** (Omit for Natural)

UM6X4-BLK-**0100** – **Package Quantity** in feet (**100'**)

Opaque Color Code		
○	-	Natural
●	BLK	Black
●	BLU	Blue
●	GRA	Gray
●	GRN	Green
●	ORG	Orange
●	RED	Red
●	YEL	Yellow

Transparent Color Code		
●	TBLU	Transparent Blue
●	TGRN	Transparent Green
●	TORG	Transparent Orange
●	TRED	Transparent Red
●	TYEL	Transparent Yellow

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Prestolok Brass
- Par-Barb

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9) or  
contact Fluid System Connectors Division  
(269) 692-6555.

## Notes

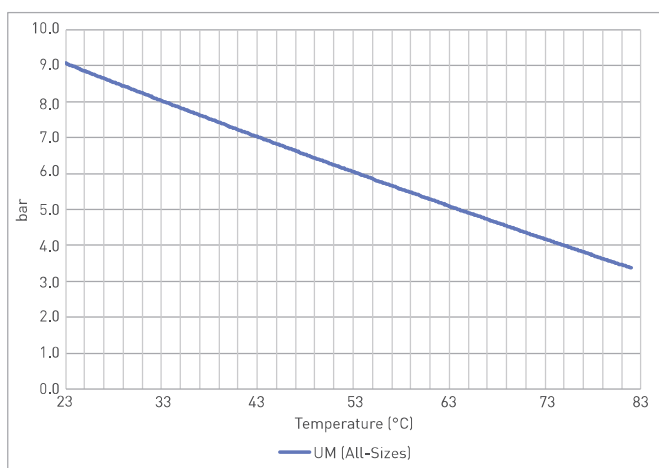
- The operating temperature range for service at rated pressures with compatible fluids is -40°F (-40°C) to +180°F (82°C)

## Colors

- See Color Code Table

## Metric Polyurethane Tubing (Series UM)

### Maximum Working Pressure (bar)



### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).







Polyurethane Tubing

Series HU: High Durometer Polyether Base



- Features
- 95 Shore A durometer or greater
  - Excellent kink and abrasion resistance
  - Excellent hydrolytic stability
  - Flexible and easy to assemble onto designated Fittings
  - Polyurethane tubing exhibits the elongation and recovery characteristics of rubber and the chemical resistance associated with plastics

Applications/Markets

- 
  - Pneumatic controls
  - Robotics
  - Machine tools
- 
  - General pneumatics
  - Vacuum equipment
  - Semiconductor equipment

Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F /23°C		Minimum Burst at 73°F /23°C		Package Quantity	Weight	
#													
	inch	mm	inch	mm	inch	mm	psi	bar	psi	bar		lbs./ft.	kg./mtr.
HU-2-XXXX	1/8	3.2	.063	1.6	.031	0.79	300	20.7	900	62.1	Package quantities vary by size and color	.005	.007
HU-2.5-XXXX	5/32	4.0	.094	2.4	.031	0.79	210	14.5	630	43.4		.006	.009
HU-4-XXXX	1/4	6.4	.160	4.1	.045	1.1	180	12.4	540	37.2		.014	.021
HU-6-XXXX	3/8	9.5	.250	6.4	.062	1.6	180	12.4	540	37.2		.030	.045
HU-8-XXXX	1/2	12.7	.320	8.1	.090	2.3	180	12.4	540	37.2		.057	.085
HU-12-XXXX	3/4	19.1	.467	11.9	.142	3.6	180	12.4	540	37.2		.133	.198

 **WARNING**

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Order Information

### Example: HU-2-BLK-0500

**HU-2-BLK-0500 – High Durometer Polyurethane**

HU-**2**-BLK-0500 – **Tube O.D.** in sixteenths of an inch (**1/8"**)

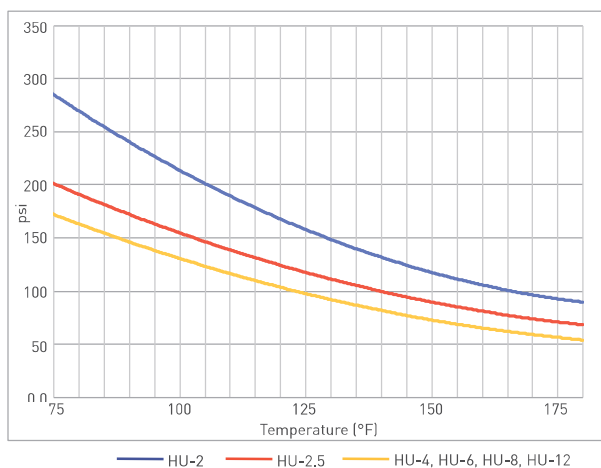
HU-2-**BLK**-0500 – **Color (Black)**

HU-2-BLK-**0500** – **Package Quantity** in feet (**500'**)

Color Code		
●	BLK	Black
●	BLU	Blue
●	DBL	Dark Blue
●	RED	Red
●	YEL	Yellow

## Polyurethane Tubing (Series HU)

### Maximum Working Pressure (psig)



#### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Metric Compression
- Fast & Tite
- Flow Controls
- Prestolok Brass
- Prestolok Composite
- Prestolok All-Metal
- Prestolok Stainless
- TrueSeal™

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9) or  
contact Fluid System Connectors Division  
(269) 692-6555.

## Notes

- The operating temperature range for service at rated pressures with compatible fluids is -40°F (-40°C) to +180°F (82°C)

## Colors

- See Color Code Table



# Metric Polyurethane Tubing

## Series HUM: High Durometer (Metric) Polyether Base



### Features

- 95 Shore A durometer or greater
- Excellent kink and abrasion resistance
- Excellent hydrolytic stability
- Flexible and easy to assemble onto designated Fittings
- Polyurethane tubing exhibits the elongation and recovery characteristics of rubber and the chemical resistance associated with plastics

### Applications/Markets



- Pneumatic controls
- Robotics
- Machine tools

- General pneumatics
- Vacuum equipment
- Semiconductor equipment



Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F / 23°C		Minimum Burst at 73°F / 23°C		Package Quantity	Weight	
#													
	mm	inch	mm	inch	mm	inch	bar	psi	bar	psi		kg./mtr.	lbs./ft.
HUM-4-XXXX	4	.157	2.4	.094	0.80	.031	12.4	180	37.2	540	Package quantities vary by size and color	.009	.006
HUM-6-XXXX	6	.236	4.0	.157	1.00	.039	12.4	180	37.2	540		.018	.012
HUM-8-XXXX	8	.315	5.0	.196	1.50	.059	12.4	180	37.2	540		.036	.024
HUM-10-XXXX	10	.393	6.5	.256	1.75	.069	12.4	180	37.2	540		.053	.036
HUM-12-XXXX	12	.472	8.0	.315	2.00	.079	12.4	180	37.2	540		.073	.049



#### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Order Information

**Example: HUM-6-BLK-0100**

**HUM-6-BLK-0100 – High Durometer Metric Polyurethane**

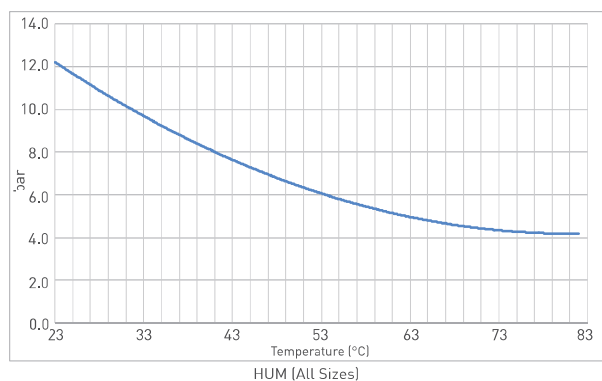
HUM-**6**-BLK-0100 – **Tube O.D.** in millimeters (**6mm**)

HUM-6-**BLK**-0100 – **Color (Black)**

HUM-6-BLK-**0100** – **Package Quantity** in feet (**100'**)

## Metric Polyurethane Tubing (Series HUM)

### Maximum Working Pressure (bar)



#### WARNING

This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Metric Compression
- Flow Controls
- Prestolok Composite
- Prestolok All-Metal
- Prestolok Stainless

For tube support use, reference Tubing/  
Fitting Compatibility Chart (pg. B-8/B-9) or  
contact Fluid System Connectors Division  
(269) 692-6555

## Notes

- The operating temperature range for service at rated pressures with compatible fluids is -40°F (-40°C) to +180°F (82°C)

## Colors

- Natural
- Black



# MicroWeld™ Tubing

## Series 95FR: Flame Resistant



### Features

- 95 Shore A durometer core tube
- Easily skived flame resistant jacket protects core tube for extended life
- Silicone and halogen free
- Excellent flexibility
- Weld spatter resistant
- Ideal for air/water supply in robotic welding applications

### Certifications

- UL-94 V0 compliant jacket material

### Applications/Markets



- Robotic Welding
- End-of-Arm Tooling
- General Robotics
- Pneumatic Systems
- General Automation

#### Fractional (Inch)

Part Number	Tube O.D.		Tube I.D. (ref)		Wall Thickness		Final Sheath O.D.		Final Sheath Wall Thickness		Working Pressure at 73°F		Minimum Burst at 73°F		Minimum Bend Radius		Package Quantity	Weight	
#	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	psi	bar	psi	bar	inch	mm	feet	lbs./ft.	kg./mtr.
95FR-4	1/4	6.4	.125	3.2	.045	1.1	.340	8.6	.045	1.1	240	17	720	50	3/4	19	250, 500	.042	.062
95FR-6	3/8	9.5	.250	6.4	.062	1.6	.465	11.8	.045	1.1	230	16	690	48	1	25	250, 500	.069	.102
95FR-8	1/2	12.7	.320	8.1	.090	2.3	.590	15	.045	1.1	220	15	660	46	2	51	250	.108	.161

#### Metric

Part Number	Tube O.D.		Tube I.D. (ref)		Wall Thickness		Final Sheath O.D.		Final Sheath Wall Thickness		Working Pressure at 23°C		Minimum Burst at 23°C		Minimum Bend Radius		Package Quantity	Weight	
#	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	feet	kg./mtr.	lbs./ft.
95FRM-6	6	.236	4	.157	1	.039	8	.315	1.1	.045	15	218	45	653	20	.787	250, 500	.056	.038
95FRM-8	8	.315	5	.197	1.5	.059	10	.394	1.1	.045	18	261	54	783	22	.866	250, 500	.085	.057
95FRM-10	10	.394	6.5	.256	1.75	.069	12	.472	1.1	.045	16	232	48	696	26	1.02	250	.113	.076
95FRM-12	12	.472	8	.315	2	.078	14	.551	1.1	.045	16	232	48	696	32	1.26	250	.144	.097



#### WARNING

This product can expose you to chemicals including Antimony Oxide (Antimony Trioxide), which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Order Information

### Example: 95FR-4-BLU-0250

**95FR-4-BLU-0250**– High Durometer Polyurethane

95FR-**4**-BLU-0250 – **Tube O.D.** in sixteenths of an inch (**1/4"**)

95FR-4-**BLU**-0250– **Color (Blue)**

95FR-4-BLU-**0250** – **Package Quantity** in feet (**250'**)

## Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Family:

- PLM

## Notes:

The operating temperature range for service at rated pressures with compatible fluids is -40°F to +165°F (-40°C to +75°C)

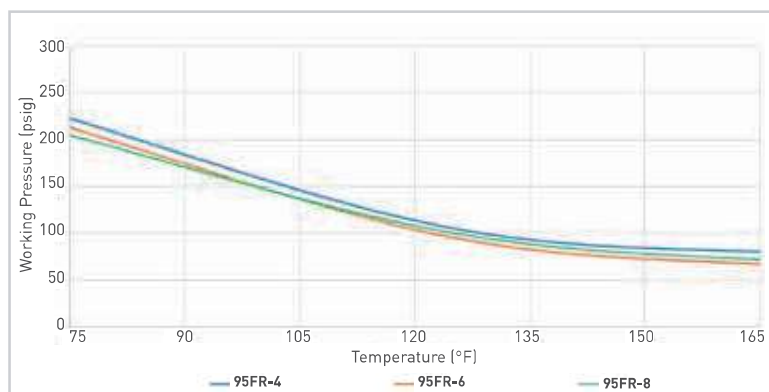
## Colors

- See Color Code Table

Additional Color Code		
●	BLU	Blue
●	BLK	Black
●	GRN	Green
●	RED	Red
○	WHT	White

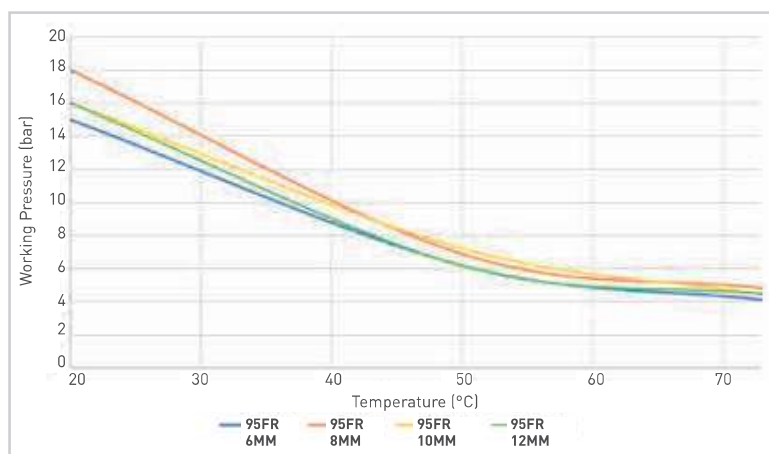
## Fractional MicroWeld™ Tubing (Series 95FR)

### Maximum Working Pressure (psig)



## Metric MicroWeld™ Tubing (Series 95FR)

### Maximum Working Pressure (bar)



### WARNING

This product can expose you to chemicals including Antimony Oxide (Antimony Trioxide), which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# Vinyl Tubing

## Series PV: Clear Vinyl Tubing



### Features

- Made from a virgin clear PVC (polyvinyl chloride) resin; specifically formulated for exceptional purity, clarity and flexibility
- 70 durometer for soft, easy handling and bending without tubing collapse

### Certifications

- FDA compliant

### Applications/Markets



- Low-pressure chemicals
- Pneumatics
- Low-pressure sight flow indicator

### Order Information

#### Example: PV108-1

#### PV108-1 – Poly-Vinyl Tubing

PV108-1 – **Tube O.D.** in sixteenths of an inch (**5/8"**)

PV108-1 – **Tube I.D.** in sixteenths of an inch (**1/2"**)

PV108-1 – **Formula V-1 FDA Approved Formulation**

### Notes

- Formula V-1 tubing fully meets all specifications called out by the United States Food and Drug Administration (FDA) for materials in contact with food and drugs for human consumption
- The operating temperature range for service at rated pressures with compatible fluids is -40°F (-40°C) to +150°F (65°C)

### Fittings

Parker fittings available from:  
Fluid System Connectors Division  
Otsego, MI  
(269) 692-6555  
(269) 694-4614 FAX

FSC Product Families:

- Poly-Tite
- Fast & Tite
- TrueSeal™
- Par-Barb®
- Hose Barb
- Garden Hose

For tube support use, reference Tubing/Fitting Compatibility Chart (pg. B-8/B-9) or contact Fluid System Connectors Division (269) 692-6555.









#### WARNING

This product can expose you to chemicals including Di(2-ethylhexyl) phthalate (DEHP), which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.65Warnings.ca.gov](http://www.65Warnings.ca.gov).



# Vinyl Tubing (cont.)

## Series PV: Clear Vinyl Tubing

Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F / 23°C		Std. Coil	Weight	
#											
	inch	mm	inch	mm	inch	mm	psi	bar	feet	lbs./ft.	kg./mtr.
PV21-1	1/8	3.2	.063	1.6	.031	.79	35	2.4	100	.005	.007
PV32-1	.170	4.3	.125	3.2	.025	.64	35	2.4	100	.006	.009
PV42-1	1/4	6.4	.125	3.2	.063	1.6	65	4.5	100	.025	.037
PV43-1	1/4	6.4	.170	4.3	.040	1.2	55	3.8	100	.014	.021
PV403-1	1/4	6.4	.188	4.8	.031	.79	22	1.5	100	.011	.016
PV53-1	5/16	7.9	.188	4.8	.063	1.6	55	3.8	100	.025	.037
PV63-1	3/8	9.5	.188	4.8	.094	2.4	65	4.5	100	.043	.064
PV73-1	7/16	11.1	.188	4.8	.125	3.2	75	5.2	100	.063	.094
PV54-1	5/16	7.9	.250	6.4	.031	.79	20	1.4	100	.014	.021
PV64-1	3/8	9.5	.250	6.4	.064	1.6	55	3.8	100	.032	.048
PV74-1	7/16	11.1	.250	6.4	.094	2.4	60	4.1	100	.052	.077
PV84-1	1/2	12.7	.250	6.4	.125	3.2	70	4.8	100	.076	.113
PV75-1	7/16	11.1	.313	7.9	.063	1.6	50	3.4	100	.038	.057
PV85-1	1/2	12.7	.313	7.9	.094	2.4	60	4.1	100	.062	.092
PV95-1	9/16	14.3	.313	7.9	.125	3.2	70	4.8	100	.088	.131
PV86-1	1/2	12.7	.375	9.5	.063	1.6	45	3.1	100	.044	.065
PV96-1	9/16	14.3	.375	9.5	.094	2.4	50	3.4	100	.071	.106
PV106-1	5/8	15.9	.375	9.5	.125	3.2	60	4.1	100	.101	.150
PV97-1	9/16	14.3	.438	11.1	.063	1.6	40	2.8	100	.050	.074
PV107-1	5/8	15.9	.438	11.1	.094	2.4	45	3.1	100	.080	.119
PV117-1	11/16	17.5	.438	11.1	.125	3.2	50	3.4	100	.115	.171
PV108-1	5/8	15.9	.500	12.7	.063	1.6	30	2.1	100	.057	.085
PV118-1	11/16	17.5	.500	12.7	.094	2.4	40	2.8	100	.089	.132
PV128-1	3/4	19.1	.500	12.7	.125	3.2	45	3.1	100	.126	.187
PV138-1	13/16	20.7	.500	12.7	.156	4.0	60	4.1	100	.167	.248
PV129-1	3/4	19.1	.563	14.3	.094	2.4	40	2.8	100	.099	.147
PV139-1	13/16	20.7	.563	14.3	.125	3.2	45	3.1	100	.138	.205
PV1310-1	13/16	20.7	.625	15.9	.094	2.4	35	2.4	100	.108	.161
PV1410-1	7/8	22.2	.625	15.9	.125	3.2	40	2.8	100	.151	.225
PV1510-1	15/16	23.8	.625	15.9	.156	4.0	50	3.5	100	.196	.292
PV1411-1	7/8	22.2	.688	17.5	.094	2.4	30	2.1	100	.118	.176
PV1611-1	1	25.4	.688	17.5	.156	4.0	45	3.1	100	.213	.317













### WARNING

This product can expose you to chemicals including Di(2-ethylhexyl) phthalate (DEHP), which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.65Warnings.ca.gov](http://www.65Warnings.ca.gov).



# Vinyl Tubing (cont.)

## Series PV: Clear Vinyl Tubing

Part Number	Tube O.D.		Tube I.D.		Average Wall Thickness		Working Pressure at 73°F / 23°C		Std. Coil	Weight	
#											
	inch	mm	inch	mm	inch	mm	psi	bar	feet	lbs./ft.	kg./mtr.
PV1612-1	1	25.4	.750	19.1	.125	3.2	35	2.4	100	.176	.262
PV1712-1	1-1/16	27.0	.750	19.1	.156	4.0	35	2.4	100	.228	.339
PV1812-1	1-1/8	28.6	.750	19.1	.188	4.8	50	3.5	100	.283	.421
PV2012-1	1-1/4	31.8	.750	19.1	.250	6.4	55	3.8	50	.409	.609
PV1814-1	1-1/8	28.6	.875	22.2	.125	3.2	30	2.1	50	.201	.299
PV1914-1	1-3/16	30.2	.875	22.2	.156	4.0	35	2.4	100	.259	.385
PV2014-1	1-1/4	31.8	.875	22.2	.188	4.8	45	3.1	50	.321	.478
PV2016-1	1-1/4	31.8	1.000	25.4	.125	3.2	25	1.7	50	.230	.342
PV2116-1	1-5/16	33.4	1.000	25.4	.156	4.0	30	2.1	50	.291	.433
PV2216-1	1-3/8	34.9	1.000	25.4	.188	4.8	40	2.8	50	.359	.534
PV2416-1	1-1/2	38.1	1.000	25.4	.250	6.4	45	3.1	50	.514	.765
PV2218-1	1-3/8	34.9	1.125	28.6	.125	3.2	25	1.7	50	.252	.375
PV2420-1	1-1/2	38.1	1.250	31.8	.125	3.2	20	1.4	50	.277	.412
PV2620-1	1-5/8	41.3	1.250	31.8	.188	4.8	35	2.4	50	.434	.646
PV2820-1	1-3/4	44.4	1.250	31.8	.250	6.4	45	3.1	50	.604	.899
PV3024-1	1-7/8	47.6	1.500	38.1	.188	4.8	30	2.1	50	.510	.759
PV3224-1	2	50.8	1.500	38.1	.250	6.4	40	2.8	50	.705	1.05
PV3628-1	2-1/4	57.2	1.750	44.4	.250	6.4	30	2.1	50	.806	1.20
PV4032-1	2-1/2	63.5	2.000	50.8	.250	6.4	35	2.4	50	.906	1.35

**WARNING**

This product can expose you to chemicals including Di(2-ethylhexyl) phthalate (DEHP), which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.65Warnings.ca.gov](http://www.65Warnings.ca.gov).



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# Fluoropolymer Tubing

## Fluoropolymer Tubing

Fluoropolymer tubing features a low coefficient of friction and anti-stick properties, high temperature capabilities and the most corrosion and chemical resistance of all polymers. Within normal use temperatures, fluoropolymers are attacked by so few chemicals that it is easier to describe the exceptions rather than list the chemicals they are compatible with (see Chemical Resistance Summary, pg. B-46). These chemically inert tubes are non-wetting and non-leaching, making them ideal for a wide range of fluid and material handling applications.

Parker fluoropolymer tubing is available in PTFE, FEP and PFA with some materials operating at temperatures up to 500°F (260°C). Each material has specific dominant characteristics, but all operate in high-temperature, corrosive environments.

- Parflex PTFE, FEP, and PFA tubing complies with European Standard RoHs and are also FDA compliant to FDA regulation 21 CFR 177.1550, making these products suitable for use in food and beverage applications.
- Parflex PTFE, FEP and PFA are listed VW-1 in the burning test for Underwriters Laboratories and pass the UL-83 vertical flame test. In a flame situation, PTFE, FEP and PFA tubing resist combustion and do not promote flame spread.

**All fluoropolymer tubing dimensions are continuously monitored to ensure an overall quality product. Most tubing sizes are packaged in convenient 25-ft., 50-ft., 100-ft. and 1,000-ft. lengths.**

### PTFE

- PTFE (Polytetrafluoroethylene) is offered in smoothbore tubing, heat shrinkable, spiral wrap and convoluted tubing.
- PTFE tubing features unmatched chemical resistance and a non-stick surface that facilitates flow and eliminates media buildup.

### FEP

- FEP (Fluorinated Ethylene Propylene) is available in smoothbore tubing, heat shrinkable, convoluted, corrugated and retractable coil tubing.
- FEP tubing offers the highest clarity in the fluoropolymer market and is a close second to PTFE in chemical resistance.
- FEP is available in long, continuous lengths (1,000 feet and longer) whereas the longest lengths for PTFE range from 200 to 1,000 feet depending on size and wall thickness.



# Fluoropolymer Tubing

Product Family	Type	Series		Suggested Applications		Suggested Markets
PTFE	Smoothbore	TFH TFS	TFT TFL	Electrical Insulation Protective Cover	Circuit Board Wire Insulation	Chemical High-Temp Food Instrumentation Laboratory Gas Sampling Electrical Insulation Fluid Handling Industrial Equipment Ground Support
	Smoothbore	101	201	Electrical Insulation Fluid Transfer	Gas Sampling Laboratory	
	Heat Shrink	HS2T	HS4T	Electrical Insulation Protective Cover	Circuit Board Rollers	
	Convolute	CV CVL	CVH 81914	Fluid Transport Wire Harness	Protection/Cable Core Robotics	
	Spiral Wrap	TSWTF		Cable Harnessing	Wiring closets	
FEP	Smoothbore	103	203	Nitrogen Filling Downhole Pump Ozone Sampling	Hearing Aid Optical Sensors	UV Applications Chemical Instrumentation Laboratory Gas Dispensing Gas Sampling Robotics Fluid Handling Food & Beverage Semiconductor Pharmaceutical Electrical Industrial Equipment Medical
	Heat Shrink	HS1.3 HS1.6	HS1.25	Protective Covering UV Light Covering Product Testing	Paper Rollers Ink Rollers	
	Convolute	CV	81914	Fluid Transport Wire Harness	Protection/Cable Core Robotics	
	Corrugated	CR		Vacuum Applications Wet Bench DNA Sequencer	Fluid Transfer Robotics	
	Retractable	703		Lab Equipment Gas Dispensing	Wet Bench Dual Containment	
PFA H.P. PFA	Smoothbore	104	204	Air Sampling Gas Purge Wet Bench	Flow Monitoring Steam Plant	Chemical Laboratory Semiconductor Instrumentation Food Environmental Fluid Handling Gas Service Pharmaceutical Medical
	High Purity Smoothbore	105	205	Flow Monitoring Systems High Purity Apps. DI Water Dispensers	DI Recirculators Heat Exchangers Pure Chemical Dispensers	
	Retractable	704	705	Lab Equipment Gas Dispensing	Wet Bench Dual Containment	

## PFA

- PFA (Perfluoroalkoxy) is available in smoothbore tubing.
- When temperature and clarity are both factors, PFA is the resin of choice because it offers the high-temperature attributes of PTFE, long continuous lengths, and almost as much clarity as FEP.
- High purity resins available.
- Low permeability.

## PFA

- H.P. PFA (Perfluoroalkoxy) has the highest molecular weight available.
- Withstands corrosive surfactants for longer periods of time than standard products.
- Lowest level of extractables.



# Fluoropolymer Tubing

## Fluoropolymer Quick Reference

### PTFE (Polytetrafluoroethylene)

Working Temperature: 500°F (260°C)

Color: Opaque to translucent

- Chemically inert
- Lowest coefficient of friction
- Superior dielectric strength
- Exceptional heat resistance
- Self extinguishing
- Non-wetting
- Excellent flexlife
- Laser markable

### PFA (Perfluoroalkoxy)

Working Temperature: 500°F (260°C)

Color: Clear with light blue or tint

- High purity resins available
- Low permeation resins available
- Use when you need the temperature range of PTFE and the clarity of FEP
- Exceptional heat resistance
- Self extinguishing
- Non-wetting
- Good flexlife

### FEP (Fluorinated Ethylene Propylene)

Working Temperature: 400°F (204°C)

Color: Clear

- Excellent chemical resistance
- Non-wetting
- Weldable
- Tubes can be sealed by melting
- Long continuous lengths
- Low refractive index
- Improved clarity over PFA
- Lower cost alternative to PFA

## Chemical Resistance Summary



Within normal use, temperatures, fluoropolymers are attacked by so few chemicals that it is easier to describe the exceptions rather than list the chemicals they are compatible with.

### DO NOT USE FLUOROPLASTICS WITH THE FOLLOWING:

- Alkali metals such as elemental sodium, potassium, lithium, etc. The alkali metals remove fluorine from the polymer molecule.
- Extremely potent oxidizers, fluorine (F<sub>2</sub>) and related compounds (e.g., chlorine trifluoride, ClF<sub>3</sub>). These can be handled by fluoropolymers, but only with great care, as fluorine is absorbed into the resins, and the mixture becomes sensitive to a source of ignition such as impact.
- 80% NaOH (Sodium Hydroxide) or KOH (Potassium Hydroxide), metal hydrides such as Boranes (e.g., B<sub>2</sub>H<sub>6</sub>), Aluminum Chloride, Ammonia (NH<sub>3</sub>), certain Amines (R-NH<sub>2</sub>) and imines (R=NH) and 70% Nitric Acid at temperatures near the suggested service limit.



### WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.



# Fluoropolymer Tubing

## Fluoropolymer Resin Comparison

The table below lists a generally accepted summary of properties that we believe to be reliable. Please note that many of these resins are produced in several varieties and property characteristics may vary. Therefore, determination of resin is dependent on the application and this table is only meant to serve as a general guideline.

Properties*	ASTM or Unit	PTFE	FEP	PFA	High Purity PFA
<b>MECHANICAL PROPERTIES</b>					
Specific Gravity	D792 D3307	2.13-2.22 -	2.12-2.17 -	2.12-2.17 -	- 2.14-2.16
Elongation %	D638 D3307	200-450 -	250-330 -	280-400 -	- 370
Tensile Strength (psi)	D638(psi) D3307(psi)	2000-7000 -	2800-4000 -	4000-5000 -	- 4693
Flexural Strength (psi)	D790	no break	no break	no break	no break
Compressive Strength (psi)	D695	700-900	725-2200	725-810	na
Tensile Elastic Modulus (Young's Modulus) (psi)	D638	57,000 -	50,000 -	72,500- 87,000	na
Flexural Modulus	D790(psi) D790 103MPa (103kgf/cm2)	71,000-85,000 0.5-0.6 (5.0-6.0)	78,000-92,000 0.5-0.6 (5.5-6.4)	94,000-99,000 0.6-0.7 (6.6-7.0)	- 647-686 -
Flex Life (MIT cycles)	D2176	>1,000,000	5,000-80,000	10,000-500,000	2000 x 10 <sup>3</sup>
Hardness Durometer Shore D	D2240	D50-65	D55	D55-D60	D60
Coefficient of Friction	(on steel)	0.02	0.05	0.04-0.06	0.05
Abrasion Resistance 1000 cycles	Taber	8-90	14-20	0.00-96.75	na
Impact Strength IZO.D. 73°F (23°C) notched ft/lbs/in	D256	3	no break	no break	no break
<b>THERMAL PROPERTIES</b>					
Melting Point	°C °F	327 621	260 500	305 582	305 582
Upper Service Temperature(20000h)	°C °F	260 500	204 400	260 500	260 500
Flammability	UL 94	V-0	V-0	V-0	V-0
Thermal Conductivity BTU-in/hr-ft², °F		1.7-2.08	1.4	1.3	na
Thermal Conductivity Cal-cm/sec-cm², °C		6 x 10-4	6 x 10-4	6 x 10-6	na
Linear Coefficient of Thermal Expansion Min/in°F 73.4-140°F	D696	55.6	46.1-58.3	66.7	na
Heat of Fusion	BTU/LB	29-37	4-35	13	na
Heat of Combustion	BTU/LB °F	2200	2200	2300	na
Low Temperature Embrittlement	°C °F	-268 -450	-268 -450	-268 -450	-268 -450
<b>ELECTRICAL PROPERTIES</b>					
Dielectric Constant	D150/10³Hz D150/10⁶Hz	2.1 2.1	2.1 2.1	2.1 2.1	2.1 2.1
Dielectric Strength	D149/125 MIL D149/10 MIL	500 ≥1400	508 ≥610	500 ≥1400	500 - 600 na
Volume Resistivity	D257/ohm-cm	>10¹⁸	>10¹⁸	>10¹⁸	na
Surface Resistivity	D257/ohm-cm	>10¹⁸	>10¹⁷	>10¹⁷	na
<b>GENERAL PROPERTIES</b>					
Chemical/Solvent Resistance	D543	Excellent	Excellent	Excellent	Excellent
Refractive Index		1.35	1.338	1.34	1.34
Limiting Oxygen Index, %	D2868	>95	>95	≥95	na
Water Contact Angle	Angle to Level	110	114	115	na
Water Absorption 24h,%	D570	<0.01	<0.01	<0.03	<0.01
Weatherability		Excellent	Excellent	Excellent	Excellent

\*General resin properties; Tubing properties may vary.

## Tubing Pressure Ranges

Tubing pressures vary by material, tubing size and wall thickness. Please contact Customer Service for specific pressures.

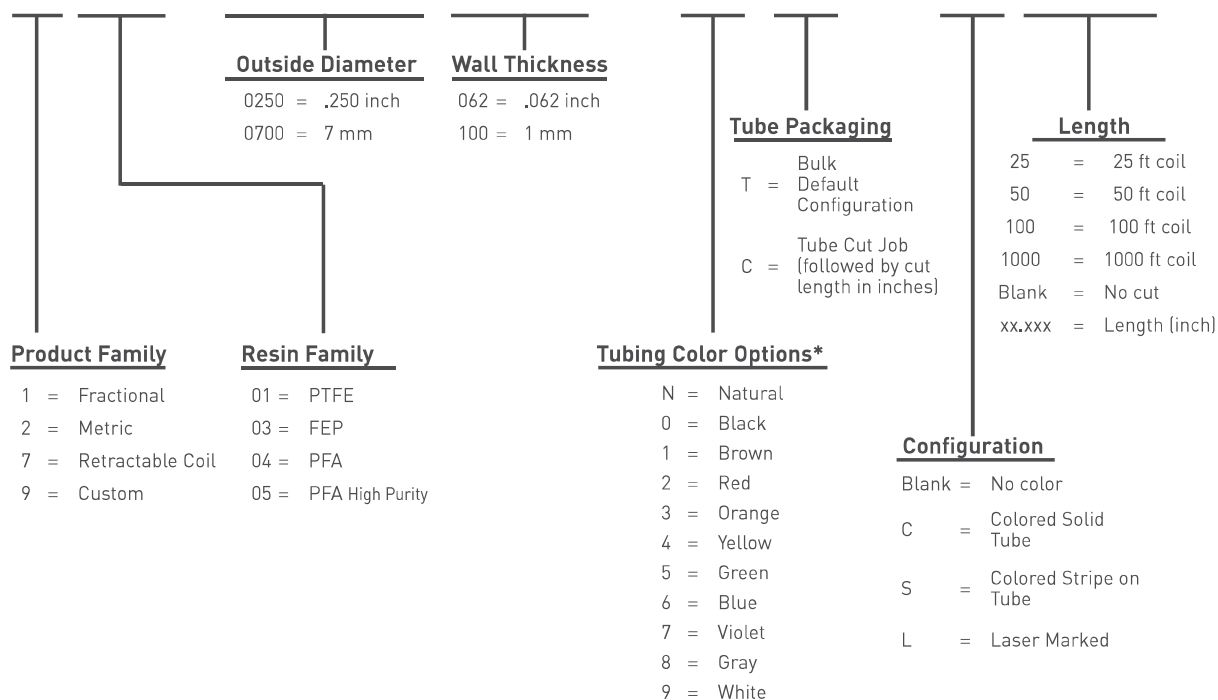


# Fluoropolymer Tubing

## Fluoropolymer Tubing Nomenclature

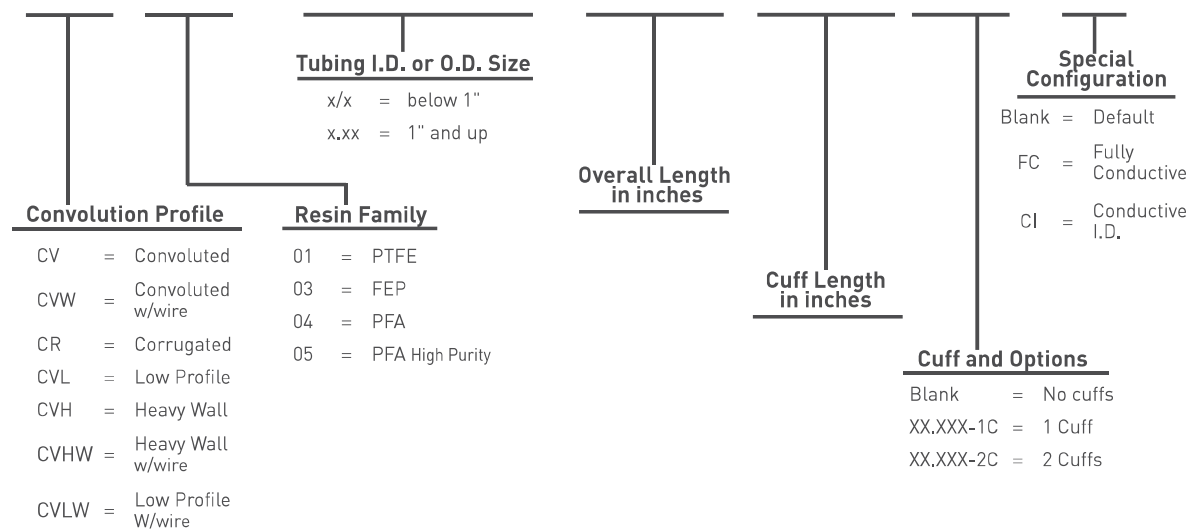
Smoothbore Fractional and Metric Tubing

# 105- 0250 062 - N T - 100



## Convolute and Corrugated Tubing

# CV01- 1/8ID- 88- 1.5-2C





# Fluoropolymer Tubing

## Fluoropolymer Tubing Nomenclature

### Heat Shrink and Electrical Insulation Tubing

# HS2\*\*TF T 1/8 - NT\*\*\*

Special Configurations		Tubing Configurations		Tubing Color Options*		Configuration	
Blank if Smooth Bore		H = Heavy Wall		N = Natural		Blank = No color	
HS2 = 2:1 Ratio PTFE		S = Standard Wall		0 = Black		C = Colored Solid Tube	
HS4 = 4:1 Ratio PTFE		T = Thin Wall		1 = Brown		S = Colored Stripe on Tube	
HS1.3 = 1.3/1:1 Ratio FEP		L = Light Wall		2 = Red			
HS1.6 = 1.67:1 Ratio FEP		I = Industrial Wall		3 = Orange			
HS1.25 = 1.25:1 Ratio FEP				4 = Yellow			
				5 = Green			
				6 = Blue			
				7 = Violet			
				8 = Gray			
				9 = White			

\*When ordering coiled tubing in colors, the color code is always followed by TC; when ordering cut lengths, the color code is followed by CC....i.e.,HS2TFT1/8-2TC ..i.e.,HS1.3FEP24-0CC48.000

\*\*This first configuration is only used for heat shrinkable tubing or spiral wrap. For example, electrical insulation tubing part number would read TFT-1/8-NT.

\*\*\*When changing to cut length, replace the T with C and specify the length in inches. If this part was cut to 4 feet, part number would read TFT-1/8-NC48.000.

\*\*\*\*Sizes for heat shrink designate the size of the heat shrink tube as stated by the applicable specification. The actual O.D. of the tubing does not always match the size. Review actual tables to see the true expanded dimension of the tube.



# PTFE Tubing

Series Fractional & Metric: 101, 201



## Features

- Virgin Polytetrafluoroethylene resin
- Chemically inert
- Lowest coefficient of friction
- Superior dielectric strength
- Exceptional heat resistance
- Self extinguishing
- Non-wetting
- Excellent flexlife
- Laser markable

## Applications/Markets



- Cable Liner
- Electrical Insulation
- Oxygen Sensor
- Paint Transfer
- Gas Sampling
- Laboratory

## Certifications/Compliance

- AMS 3653E
- VW1 and UL-83 (natural)
- FDA Compliant
- USP Class VI Compliant

## Order Information

**Example: 101-0188062-0TC-100**

**101-0188062-0TC-100 – PTFE**

**101-0188062-0TC-100 – Tube O.D. in inches (3/16")**

**101-0188062-0TC-100 – Tube Wall Thickness in inches (.062")**

**101-0188062-0TC-100 – Black**

**101-0188062-0TC-100 – Bulk Tubing**

**101-0188062-0TC-100 – Solid Color Tube**

**101-0188062-0TC-100 – Package Quantity in feet (100')**

## Fittings

Fittings available for sizes 3/32" up to 1.1"

Parker Fittings available from:  
Fluid System Connectors Division  
Otsego, MI

(269) 692-6555

(269) 692-6634 FAX

FSC Product Families:

- Compression
- Compress-Align®
- Metric Compression
- TrueSeal™

## Notes

- Working Temperature: -100°F (-73°C) to +500°F (260°C)
- Working pressure calculated using a Design Factor of 4
- Custom packaging and sizes are quoted upon request

## Colors

- ○ Natural, Translucent
- Colors available as custom run, see color code table

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			



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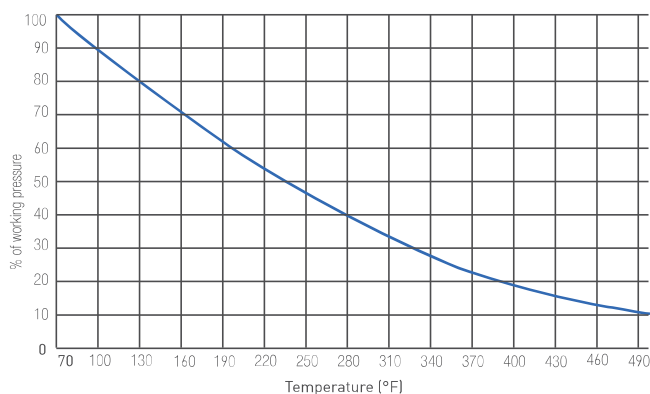
## 101 PTFE Industrial Wall Fractional Size Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	inch	inch	tol.	mm	tol.	inch	tol.	mm	tol.	inch	mm	psi 73°F	bar 23°C	psi 73°F	bar 23°C	inch	mm	at 73°F	lb. per ft.	kg. per m.
101-0094031	3/32	0.094	± 0.005	2.40	± 0.13	0.031	± 0.002	0.79	± 0.05	0.031	0.79	390	27	1560	108	0.500	13	28	0.006	0.009
101-0125031	1/8	0.125	± 0.005	3.18	± 0.13	0.063	± 0.003	1.57	± 0.05	0.031	0.79	290	20	1160	80	0.500	13	28	0.009	0.013
101-0156031	5/32	0.156	± 0.005	3.99	± 0.13	0.094	± 0.004	2.39	± 0.08	0.031	0.79	220	15	880	61	0.625	16	28	0.011	0.016
101-0188031	3/16	0.188	± 0.005	4.78	± 0.13	0.125	± 0.005	3.18	± 0.13	0.031	0.79	180	12	720	50	0.750	19	28	0.014	0.021
101-0250031	1/4	0.250	± 0.005	6.35	± 0.13	0.190	± 0.005	4.83	± 0.13	0.031	0.79	130	9	520	36	1.000	25	28	0.020	0.030
101-0312031	5/16	0.312	± 0.005	7.92	± 0.13	0.250	± 0.007	6.35	± 0.18	0.031	0.79	100	7	400	28	2.250	57	28	0.026	0.039
101-0375031	3/8	0.375	± 0.005	9.52	± 0.13	0.312	± 0.006	7.92	± 0.15	0.031	0.79	80	6	320	22	2.750	70	28	0.032	0.048
101-0438031	7/16	0.438	± 0.005	11.13	± 0.13	0.375	± 0.007	9.52	± 0.18	0.031	0.79	70	5	280	19	4.000	102	28	0.037	0.055
101-0500031	1/2	0.500	± 0.006	12.70	± 0.15	0.438	± 0.008	11.13	± 0.20	0.031	0.79	60	4	240	17	4.000	102	28	0.043	0.064
101-0563031	9/16	0.563	± 0.007	14.30	± 0.18	0.500	± 0.010	12.70	± 0.25	0.031	0.79	55	4	220	15	5.000	127	28	0.049	0.073
101-0625031	5/8	0.625	± 0.007	15.88	± 0.18	0.563	± 0.010	14.30	± 0.25	0.031	0.79	50	3	200	14	5.500	140	28	0.054	0.080
101-0688031	11/16	0.688	± 0.010	17.48	± 0.25	0.625	± 0.012	15.88	± 0.31	0.031	0.79	45	3	180	12	6.250	159	28	0.060	0.089
101-0750032	3/4	0.750	± 0.010	19.05	± 0.25	0.688	± 0.012	17.48	± 0.31	0.032	0.81	40	3	160	11	6.500	165	28	0.068	0.101
101-0830040	0.830	0.830	± 0.014	21.08	± 0.36	0.750	± 0.014	19.05	± 0.36	0.040	1.02	45	3	180	12	8.000	203	28	0.093	0.138
101-0965045	0.965	0.965	± 0.016	24.51	± 0.41	0.875	± 0.016	22.22	± 0.41	0.045	1.14	45	3	180	12	12.000	305	28	0.122	0.182
101-1100050	1.100	1.100	± 0.020	27.94	± 0.51	1.000	± 0.020	25.40	± 0.51	0.050	1.27	40	3	160	11	18.000	457	28	0.155	0.231

Continued on next page

### PTFE Tubing (Series 101, 201)

#### Maximum Working Pressure (bar)

**WARNING**









This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# PTFE Tubing

## Series Fractional & Metric: 101, 201 (cont.)

### 101 PTFE Heavy Wall Fractional Size Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	inch	inch	tol.	mm	tol.	inch	tol.	mm	tol.	inch	mm	psi 73°F	bar 23°C	psi 73°F	bar 23°C	inch	mm	at 73°F	lb. per ft.	kg. per m.
101-0188062	3/16	.188	±.005	4.78	±.13	0.063	±0.003	1.57	±.05	0.062	1.57	390	27	1560	108	0.250	6	28	0.023	0.034
101-0250047	1/4	.250	±.005	6.35	±.13	0.157	±0.005	3.99	±.13	0.047	1.19	210	14	840	58	0.625	16	28	0.028	0.042
101-0250062	1/4	.250	±.005	6.35	±.13	0.125	±0.005	3.18	±.13	0.062	1.57	290	20	1160	80	0.500	13	28	0.034	0.051
101-0312062	5/16	.312	±.005	7.92	±.13	0.188	±0.006	4.76	±.15	0.062	1.57	222	15	888	61	0.875	22	28	0.046	0.068
101-0375062	3/8	.375	±.005	9.52	±.13	0.250	±0.005	6.35	±.13	0.062	1.57	180	12	720	50	1.000	25	28	0.057	0.085
101-0438062	7/16	.438	±.005	11.13	±.13	0.312	±0.007	7.92	±.18	0.062	1.57	150	10	600	41	2.250	57	28	0.069	0.103
101-0500062	1/2	.500	±.005	12.70	±.13	0.375	±0.005	9.52	±.13	0.062	1.57	130	9	520	36	2.250	57	28	0.080	0.119
101-0563062	9/16	.563	±.007	14.30	±.18	0.437	±0.008	11.13	±.20	0.062	1.57	110	8	440	30	2.750	70	28	0.092	0.137
101-0625062	5/8	.625	±.007	15.88	±.18	0.500	±0.010	12.70	±.25	0.062	1.57	100	7	400	28	3.000	76	28	0.103	0.153
101-0688062	11/16	.688	±.010	17.48	±.25	0.563	±0.010	14.30	±.25	0.062	1.57	90	6	360	25	5.000	127	28	0.115	0.171
101-0750062	3/4	.750	±.010	19.05	±.25	0.625	±0.010	15.88	±.25	0.062	1.57	80	6	320	22	6.000	152	28	0.126	0.188
101-0875062	7/8	.875	±.014	22.22	±.36	0.750	±0.014	19.05	±.36	0.062	1.57	70	5	280	19	7.250	184	28	0.149	0.222
101-1000062	1	1.000	±.016	25.40	±.25	0.875	±0.016	22.22	±.36	0.062	1.57	100	6.9	400	28	8.000	203	28	0.172	0.256











#### WARNING

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## 201 Metric PTFE Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	mm	mm	tol.	inch	tol.	mm	tol.	inch	tol.	mm	inch	bar 23°C	psi 73°F	bar 23°C	psi 73°F	mm	inch	at 73°F	kg. per m.	lb. per ft.
201-0300100	3	3	± 0.11	0.118	± 0.004	1	± 0.11	0.039	± 0.004	1	0.039	27	390	108	1560	13	0.500	28	0.014	0.009
201-0400100	4	4	± 0.11	0.157	± 0.004	2	± 0.11	0.074	± 0.004	1	0.039	20	290	80	1160	13	0.500	28	0.020	0.014
201-0500100	5	5	± 0.11	0.197	± 0.004	3	± 0.11	0.118	± 0.004	1	0.039	15	220	61	880	19	0.750	28	0.027	0.018
201-0600100	6	6	± 0.13	0.236	± 0.005	4	± 0.13	0.157	± 0.005	1	0.039	12	180	50	720	25	1.000	28	0.034	0.023
201-0700100	7	7	± 0.13	0.276	± 0.005	5	± 0.13	0.197	± 0.005	1	0.039	10	150	41	600	38	1.500	28	0.041	0.027
201-0800100	8	8	± 0.13	0.315	± 0.005	6	± 0.13	0.236	± 0.005	1	0.039	9	130	36	520	51	2.000	28	0.048	0.032
201-0900100	9	9	± 0.13	0.354	± 0.005	7	± 0.13	0.276	± 0.005	1	0.039	8	110	30	440	57	2.250	28	0.055	0.037
201-1000100	10	10	± 0.13	0.394	± 0.005	8	± 0.13	0.315	± 0.005	1	0.039	7	100	28	400	64	2.500	28	0.061	0.041
201-1200100	12	12	± 0.15	0.472	± 0.006	10	± 0.15	0.394	± 0.006	1	0.039	6	80	22	320	76	3.000	28	0.075	0.050
201-1400100	14	14	± 0.15	0.551	± 0.006	12	± 0.15	0.472	± 0.006	1	0.039	5	70	19	280	89	3.500	28	0.089	0.060
201-1600100	16	16	± 0.15	0.630	± 0.006	14	± 0.15	0.551	± 0.006	1	0.039	4	60	17	240	108	4.250	28	0.102	0.069

**WARNING**

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# PTFE Tubing

Series Fractional: TFL, TFS, TFT



## Features

- Virgin Polytetrafluoroethylene resin
- Chemically inert
- Lowest coefficient of friction
- Superior dielectric strength
- Exceptional heat resistance
- Self extinguishing
- Non-wetting
- Excellent flexlife
- Laser markable

## Applications/Markets



- Electrical Insulation
- Protective Cover
- Cable Liner
- Spacer

## Certifications/Compliance

- AMS 3653E
- VW1 and UL-83 (natural)
- FDA Compliant
- USP Class VI Compliant
- **Light Wall** (TFL) – ASTM D3295 Class 1
- **Thin Wall** (TFT) – ASTM D3295 Class 2, AMS 3655B
- **Standard Wall** (TFS) – ASTM D3295 Class 3, MIL-I-22129C

## Order Information

**Example: TFS1/2-NT**

**TFS1/2-NT – PTFE**

**TFS1/2-NT – Standard Wall**

**TFS1/2-NT – Tube O.D. in inches (1/2")**

**TFS1/2-NT – Natural**

**TFS1/2-NT – Bulk Tubing**

## Fittings

Fittings available for sizes 3/32" up to 1.1"

Parker Fittings available from:  
Fluid System Connectors Division  
Otsego, MI

(269) 692-6555

(269) 692-6634 FAX

FSC Product Families:

- TrueSeal™

## Notes

- Working Temperature: -100°F (-73°C) to +500°F (260°C)
- Fractional tubing is supplied in random length coils
- Custom packaging, sizes and lengths are quoted upon request

## Colors

- ○ Natural, Translucent
- Colors available as custom run, see color code table

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			







### WARNING

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## TFS, TFT &amp; TFL PTFE Fractional Tubing

Size		Nominal I.D.		Standard Wall			Thin Wall			Light Wall			Standard Packaging
				Part Number	Nominal Wall		Part Number	Nominal Wall		Part Number	Nominal Wall		
			#			#			#				
inch	inch	mm	Natural	inch	mm	Natural	inch	mm	Natural	inch	mm		
1/8	0.125	3.18	TFS1/8	0.020	0.51	TFT1/8	0.015	0.38	TFL1/8	0.008	0.20	Random Length Coil	
3/16	0.188	4.78	TFS3/16	0.020	0.51	TFT3/16	0.015	0.38	TFL3/16	0.010	0.25	Random Length Coil	
1/4	0.250	6.35	TFS1/4	0.020	0.51	TFT1/4	0.015	0.38	TFL1/4	0.010	0.25	Random Length Coil	
5/16	0.318	7.92	TFS5/16	0.020	0.51	TFT5/16	0.015	0.38	TFL5/16	0.012	0.30	Random Length Coil	
3/8	0.381	9.52	TFS3/8	0.025	0.64	TFT3/8	0.015	0.38	TFL3/8	0.015	0.38	Random Length Coil	
7/16	0.444	11.13	TFS7/16	0.025	0.64	TFT7/16	0.018	0.46	TFL7/16	0.018	0.46	Random Length Coil	
1/2	0.507	12.70	TFS1/2	0.025	0.64	TFT1/2	0.018	0.46	TFL1/2	0.018	0.46	Random Length Coil	
5/8	0.632	15.88	TFS5/8	0.025	0.64	TFT5/8	0.020	0.51	-	-	-	Random Length Coil	
3/4	0.760	19.05	TFS3/4	0.030	0.76	TFT3/4	0.025	0.64	-	-	-	Random Length Coil	
7/8	0.885	22.22	TFS7/8	0.035	0.89	-	-	-	-	-	-	Random Length Coil	
1	1.010	25.40	TFS1.00	0.035	0.89	-	-	-	-	-	-	Random Length Coil	

**WARNING**

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# PTFE Tubing

Series AWG: TFH, TFS, TFT, TFL



## Features

- Virgin Polytetrafluoroethylene resin
- Chemically inert
- Lowest coefficient of friction
- Superior dielectric strength
- Exceptional heat resistance
- Self extinguishing
- Non-wetting
- Excellent flexlife
- Laser markable

## Applications/Markets



- Electrical Insulation
- Protective Cover
- Circuit Board
- Wire Insulation
- Strain Relief
- Introducer
- Stent Delivery

## Certifications/Compliance

- AMS 3653E
- VW1 and UL-83 (natural)
- FDA Compliant
- USP Class VI Compliant
- **Light Wall** (TFL) – ASTM D3295 Class 1, UL-224 150V 200°C
- **Thin Wall** (TFT) – ASTM D3295 Class 2, AMS 3655B, UL-224 300V 200°C, CSA 9032-01 300V
- **Standard Wall** (TFS) – ASTM D3295 Class 3, MIL-I-22129C, UL-224 600V 200°C, CSA 9032-01 600V
- **Heavy Wall** (TFH) – ASTM D3295, Class 4

## Order Information

**Example: TFH13-2TC**

**TFH13-2TC – PTFE**

**TFH13-2TC – Heavy Wall**

**TFH13-2TC – AWG Size**

**TFH13-2TC – Red**

**TFH13-2TC – Bulk Tubing**

**TFH13-2TC – Solid Color Tube**

## Colors

- ○ Natural, Translucent
- Colors available as custom run, see color code table

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			

## Notes

- Working Temperature: -100°F (-73°C) to +500°F (260°C)
- AWG Spaghetti tubing is supplied in random lengths
- Continuous lengths and colors quoted upon request
- Consult factory for pricing and minimum lengths











### WARNING









This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## TFH PTFE AWG Heavy Wall

Part Number	Order Size	Nominal I.D.		Minimum I.D.		Maximum I.D.		Nominal Wall		Standard Packaging
#										
	AWG	inch	mm	inch	mm	inch	mm	inch	mm	
TFH24	24	0.022	0.56	0.020	0.51	0.026	0.66	0.016 ± 0.003	0.41 ± 0.08	1,000 ft. Spool
TFH23	23	0.026	0.66	0.023	0.58	0.029	0.74	0.016 ± 0.003	0.41 ± 0.08	1,000 ft. Spool
TFH22	22	0.028	0.71	0.025	0.64	0.032	0.81	0.016 ± 0.003	0.41 ± 0.08	1,000 ft. Spool
TFH21	21	0.032	0.81	0.029	0.74	0.035	0.89	0.016 ± 0.003	0.41 ± 0.08	1,000 ft. Spool
TFH20	20	0.034	0.86	0.032	0.81	0.040	1.02	0.018 ± 0.003	0.46 ± 0.08	1,000 ft. Spool
TFH19	19	0.038	0.97	0.036	0.91	0.044	1.12	0.020 ± 0.004	0.51 ± 0.10	1,000 ft. Spool
TFH18	18	0.042	1.07	0.040	1.02	0.049	1.25	0.020 ± 0.004	0.51 ± 0.10	1,000 ft. Spool
TFH17	17	0.048	1.22	0.045	1.14	0.054	1.37	0.020 ± 0.004	0.51 ± 0.10	1,000 ft. Spool
TFH16	16	0.053	1.35	0.051	1.30	0.061	1.55	0.020 ± 0.004	0.51 ± 0.10	1,000 ft. Spool
TFH15	15	0.059	1.50	0.057	1.45	0.067	1.70	0.020 ± 0.004	0.51 ± 0.10	1,000 ft. Spool
TFH14	14	0.066	1.68	0.064	1.63	0.074	1.88	0.020 ± 0.004	0.51 ± 0.10	500 ft. Spool
TFH13	13	0.076	1.93	0.072	1.83	0.082	2.08	0.020 ± 0.004	0.51 ± 0.10	500 ft. Spool
TFH12	12	0.085	2.16	0.081	2.06	0.091	2.31	0.020 ± 0.004	0.51 ± 0.10	500 ft. Spool
TFH11	11	0.095	2.41	0.091	2.31	0.101	2.57	0.020 ± 0.004	0.51 ± 0.10	500 ft. Spool
TFH10	10	0.106	2.69	0.102	2.59	0.112	2.84	0.025 ± 0.005	0.64 ± 0.13	500 ft. Spool
TFH09	9	0.118	3.00	0.114	2.90	0.124	3.15	0.025 ± 0.005	0.64 ± 0.13	500 ft. Spool
TFH08	8	0.133	3.38	0.129	3.28	0.141	3.58	0.030 ± 0.005	0.76 ± 0.13	Random Length Coil
TFH07	7	0.148	3.76	0.144	3.66	0.158	4.01	0.030 ± 0.005	0.76 ± 0.13	Random Length Coil
TFH06	6	0.166	4.22	0.162	4.11	0.178	4.52	0.030 ± 0.005	0.76 ± 0.13	Random Length Coil
TFH05	5	0.185	4.70	0.182	4.62	0.196	4.98	0.032 ± 0.005	0.81 ± 0.13	Random Length Coil

## TFL PTFE AWG Light Wall

Part Number	Order Size	Nominal I.D.		Minimum I.D.		Maximum I.D.		Nominal Wall		Standard Packaging
#										
	AWG	inch	mm	inch	mm	inch	mm	inch	mm	
TFL32	32	0.01	0.25	0.008	0.2	0.012	0.31	0.005 ± 0.002	0.13 ± 0.05	1,000 ft. Spool Only
TFL30	30	0.012	0.31	0.010	0.25	0.015	0.38	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL28	28	0.015	0.38	0.013	0.33	0.018	0.46	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL26	26	0.018	0.46	0.016	0.41	0.022	0.56	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL24	24	0.022	0.56	0.020	0.51	0.026	0.66	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL23	23	0.026	0.66	0.023	0.58	0.029	0.74	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL22	22	0.028	0.71	0.025	0.64	0.032	0.81	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL21	21	0.032	0.81	0.029	0.74	0.035	0.89	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL20	20	0.034	0.86	0.032	0.81	0.04	1.02	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL19	19	0.038	0.97	0.036	0.91	0.044	1.12	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL18	18	0.042	1.07	0.040	1.02	0.049	1.25	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL17	17	0.048	1.22	0.045	1.14	0.054	1.37	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL16	16	0.053	1.35	0.051	1.3	0.061	1.55	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL15	15	0.059	1.50	0.057	1.45	0.067	1.70	0.006 ± 0.002	0.13 ± 0.05	1,000 ft. Spool
TFL14	14	0.066	1.68	0.064	1.63	0.074	1.88	0.008 ± 0.002	0.20 ± 0.05	500 ft. Spool
TFL13	13	0.076	1.93	0.072	1.83	0.082	2.08	0.008 ± 0.002	0.20 ± 0.05	500 ft. Spool
TFL12	12	0.085	2.16	0.081	2.06	0.091	2.31	0.008 ± 0.002	0.20 ± 0.05	500 ft. Spool
TFL11	11	0.095	2.41	0.091	2.31	0.101	2.57	0.008 ± 0.002	0.20 ± 0.05	500 ft. Spool
TFL10	10	0.106	2.69	0.102	2.59	0.112	2.84	0.008 ± 0.002	0.20 ± 0.05	500 ft. Spool
TFL09	9	0.118	3.00	0.114	2.9	0.124	3.15	0.008 ± 0.002	0.20 ± 0.05	500 ft. Spool
TFL08	8	0.133	3.38	0.129	3.28	0.141	3.58	0.008 ± 0.002	0.20 ± 0.05	Random Length Coil
TFL07	7	0.148	3.76	0.144	3.66	0.158	4.01	0.008 ± 0.002	0.20 ± 0.05	Random Length Coil
TFL06	6	0.166	4.22	0.162	4.11	0.178	4.52	0.010 ± 0.003	0.25 ± 0.08	Random Length Coil
TFL05	5	0.185	4.70	0.182	4.62	0.196	4.98	0.010 ± 0.003	0.25 ± 0.08	Random Length Coil
TFL04	4	0.208	5.28	0.204	5.18	0.224	5.69	0.010 ± 0.003	0.25 ± 0.08	Random Length Coil
TFL03	3	0.234	5.94	0.229	5.82	0.249	6.32	0.010 ± 0.003	0.25 ± 0.08	Random Length Coil
TFL02	2	0.263	6.68	0.258	6.55	0.278	7.06	0.010 ± 0.003	0.25 ± 0.08	Random Length Coil
TFL01	1	0.294	7.47	0.289	7.34	0.311	7.90	0.012 ± 0.003	0.31 ± 0.08	Random Length Coil
TFL00	0	0.33	8.38	0.325	8.25	0.347	8.81	0.012 ± 0.003	0.31 ± 0.08	Random Length Coil



### WARNING

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## Certifications/ Compliance

- ASTM D3295 Class 4
- AMS 3653E
- FDA Compliant
- USP Class VI Compliant

## Certifications/ Compliance

- ASTM D3295 Class 1
- AMS 3653E
- UL-224 150V 200°C
- FDA Compliant
- USP Class VI Compliant

A Hose

B Tubing  
Fluoropolymer

C Coiled Air Hose  
& Fittings

D Transportation

E Fittings

F Tooling,  
Equipment  
& Accessories









G General  
Technical



# PTFE Tubing

Series AWG: TFH, TFL, TFS, TFT (cont.)

## TFS PTFE AWG Standard Wall

Part Number	Order Size	Nominal I.D.		Minimum I.D.		Maximum I.D.		Nominal Wall		Standard Packaging
#										
	AWG	inch	mm	inch	mm	inch	mm	inch	mm	
TFS30	30	0.012	0.31	0.010	0.25	0.015	0.38	.009 ± .002	0.23 ± 0.05	1,000 ft. Spool
TFS28	28	0.015	0.38	0.013	0.33	0.018	0.46	.009 ± .002	0.23 ± 0.05	1,000 ft. Spool
TFS26	26	0.018	0.46	0.016	0.41	0.022	0.56	.009 ± .002	0.23 ± 0.05	1,000 ft. Spool
TFS24	24	0.022	0.56	0.020	0.51	0.026	0.66	.012 ± .003	0.31 ± 0.08	1,000 ft. Spool
TFS23	23	0.026	0.66	0.023	0.58	0.029	0.74	.012 ± .003	0.31 ± 0.08	1,000 ft. Spool
TFS22	22	0.028	0.71	0.025	0.64	0.032	0.81	.012 ± .003	0.31 ± 0.08	1,000 ft. Spool
TFS21	21	0.032	0.81	0.029	0.74	0.035	0.89	.012 ± .003	0.31 ± 0.08	1,000 ft. Spool
TFS20	20	0.034	0.86	0.032	0.81	0.040	1.02	.016 ± .003	0.41 ± .0.08	1,000 ft. Spool
TFS19	19	0.038	0.97	0.036	0.91	0.044	1.12	.016 ± .003	0.41 ± .0.08	1,000 ft. Spool
TFS18	18	0.042	1.07	0.040	1.02	0.049	1.25	.016 ± .003	0.41 ± .0.08	1,000 ft. Spool
TFS17	17	0.048	1.22	0.045	1.14	0.054	1.37	.016 ± .003	0.41 ± .0.08	1,000 ft. Spool
TFS16	16	0.053	1.35	0.051	1.30	0.061	1.55	.016 ± .003	0.41 ± .0.08	1,000 ft. Spool
TFS15	15	0.059	1.50	0.057	1.45	0.067	1.70	.016 ± .003	0.41 ± .0.08	500 ft. Spool
TFS14	14	0.066	1.68	0.064	1.63	0.074	1.88	.016 ± .003	0.41 ± .0.08	500 ft. Spool
TFS13	13	0.076	1.93	0.072	1.83	0.082	2.08	.016 ± .003	0.41 ± .0.08	500 ft. Spool
TFS12	12	0.085	2.16	0.081	2.06	0.091	2.31	.016 ± .003	0.41 ± .0.08	500 ft. Spool
TFS11	11	0.095	2.41	0.091	2.31	0.101	2.57	.016 ± .003	0.41 ± .0.08	500 ft. Spool
TFS10	10	0.106	2.69	0.102	2.59	0.112	2.84	.016 ± .003	0.41 ± .0.08	500 ft. Spool
TFS09	9	0.118	3.00	0.114	2.90	0.124	3.15	.020 ± .004	0.51 ± .0.10	Random Length Coil
TFS08	8	0.133	3.38	0.129	3.28	0.141	3.58	.020 ± .004	0.51 ± .0.10	Random Length Coil
TFS07	7	0.148	3.76	0.144	3.66	0.158	4.01	.020 ± .004	0.51 ± .0.10	Random Length Coil
TFS06	6	0.166	4.22	0.162	4.11	0.178	4.52	.020 ± .004	0.51 ± .0.10	Random Length Coil
TFS05	5	0.185	4.70	0.182	4.62	0.196	4.98	.020 ± .004	0.51 ± .0.10	Random Length Coil
TFS04	4	0.208	5.28	0.204	5.18	0.224	5.69	.020 ± .004	0.51 ± .0.10	Random Length Coil
TFS03	3	0.234	5.94	0.229	5.82	0.249	6.32	.020 ± .004	0.51 ± .0.10	Random Length Coil
TFS02	2	0.263	6.68	0.258	6.55	0.278	7.06	.020 ± .004	0.51 ± .0.10	Random Length Coil
TFS01	1	0.294	7.47	0.289	7.34	0.311	7.90	.020 ± .004	0.51 ± .0.10	Random Length Coil
TFS00	0	0.330	8.38	0.325	8.25	0.347	8.81	.020 ± .004	0.51 ± .0.10	Random Length Coil

## Certifications/Compliance

- ASTM D3295 Class 3
- MIL-I-22129C
- AMS 3653E
- UL-224 600V 200°C
- CSA 9032-01 600V
- FDA Compliant



### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## TFL PTFE AWG Light Wall

Part Number	Order Size	Nominal I.D.		Minimum I.D.		Maximum I.D.		Nominal Wall		Standard Packaging
#										
	AWG	inch	mm	inch	mm	inch	mm	inch	mm	
TFT32	32	.010	0.25	.008	0.20	.012	0.31	0.007 ± 0.002	0.18 ± 0.05	1,000 ft. Spool Only
TFT30	30	.012	0.31	.010	0.25	.015	0.38	0.009 ± 0.002	0.23 ± 0.05	1,000 ft. Spool
TFT28	28	.015	0.38	.013	0.33	.018	0.46	0.009 ± 0.002	0.23 ± 0.05	1,000 ft. Spool
TFT26	26	.018	0.46	.016	0.41	.022	0.56	0.009 ± 0.002	0.23 ± 0.05	1,000 ft. Spool
TFT24	24	.022	0.56	.020	0.51	.026	0.66	0.010 ± 0.003	0.25 ± 0.08	1,000 ft. Spool
TFT23	23	.026	0.66	.023	0.58	.029	0.74	0.010 ± 0.003	0.25 ± 0.08	1,000 ft. Spool
TFT22	22	.028	0.71	.025	0.64	.032	0.81	0.010 ± 0.003	0.25 ± 0.08	1,000 ft. Spool
TFT21	21	.032	0.81	.029	0.74	.035	0.89	0.010 ± 0.003	0.25 ± 0.08	1,000 ft. Spool
TFT20	20	.034	0.86	.032	0.81	.040	1.02	0.012 ± 0.003	0.31 ± 0.08	1,000 ft. Spool
TFT19	19	.038	0.97	.036	0.91	.044	1.12	0.012 ± 0.003	0.31 ± 0.08	1,000 ft. Spool
TFT18	18	.042	1.07	.040	1.02	.049	1.25	0.012 ± 0.003	0.31 ± 0.08	1,000 ft. Spool
TFT17	17	.048	1.22	.045	1.14	.054	1.37	0.012 ± 0.003	0.31 ± 0.08	1,000 ft. Spool
TFT16	16	.053	1.35	.051	1.30	.061	1.55	0.012 ± 0.003	0.31 ± 0.08	1,000 ft. Spool
TFT15	15	.059	1.50	.057	1.45	.067	1.70	0.012 ± 0.003	0.31 ± 0.08	1,000 ft. Spool
TFT14	14	.066	1.68	.064	1.63	.074	1.88	0.012 ± 0.003	0.31 ± 0.08	500 ft. Spool
TFT13	13	.076	1.93	.072	1.83	.082	2.08	0.012 ± 0.003	0.31 ± 0.08	500 ft. Spool
TFT12	12	.085	2.16	.081	2.06	.091	2.31	0.012 ± 0.003	0.31 ± 0.08	500 ft. Spool
TFT11	11	.095	2.41	.091	2.31	.101	2.57	0.012 ± 0.003	0.31 ± 0.08	500 ft. Spool
TFT10	10	.106	2.69	.102	2.59	.112	2.84	0.012 ± 0.003	0.31 ± 0.08	500 ft. Spool
TFT09	9	.118	3.00	.114	2.90	.124	3.15	0.015 ± 0.003	0.38 ± 0.08	500 ft. Spool
TFT08	8	.133	3.38	.129	3.28	.141	3.58	0.015 ± 0.003	0.38 ± 0.08	Random Length Coil
TFT07	7	.148	3.76	.144	3.66	.158	4.01	0.015 ± 0.003	0.38 ± 0.08	Random Length Coil
TFT06	6	.166	4.22	.162	4.11	.178	4.52	0.015 ± 0.003	0.38 ± 0.08	Random Length Coil
TFT05	5	.185	4.70	.182	4.62	.196	4.98	0.015 ± 0.003	0.38 ± 0.08	Random Length Coil
TFT04	4	.208	5.28	.204	5.18	.224	5.69	0.015 ± 0.003	0.38 ± 0.08	Random Length Coil
TFT03	3	.234	5.94	.229	5.82	.249	6.32	0.015 ± 0.003	0.38 ± 0.08	Random Length Coil
TFT02	2	.263	6.68	.258	6.55	.278	7.06	0.015 ± 0.003	0.38 ± 0.08	Random Length Coil
TFT01	1	.294	7.47	.289	7.34	.311	7.90	0.015 ± 0.003	0.38 ± 0.08	Random Length Coil
TFT00	0	.330	8.38	.325	8.25	.347	8.81	0.015 ± 0.003	0.38 ± 0.08	Random Length Coil

## Certifications/Compliance

- ASTM D3295 Class 2
- AMS 3653E
- AMS 3655B
- UL-224 300V 200°C
- CSA 9032-01 300V
- FDA Compliant
- USP Class VI Compliant

**WARNING**

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# PTFE Spiral Cut Cable Wrap

Series: TSWTF



## Features

- Provides harnessing for wires and cable while allowing leads at various points
- Exceptional heat resistance
- Self extinguishing
- Flexible
- Superior dielectric strength

## Certifications/Compliance

- AMS 3653E
- ASTM D3295
- VW1 and UL-83 (natural)

## Applications/Markets



- Cable harnessing
- Wiring closets
- Aerospace
- Automotive

## Order Information

**Example: TSWTF-3/8-5T**

**TSWTF-3/8-5T – Spiral Wrap**

**TSWTF-3/8-5T – Material (PTFE)**

**TSWTF-3/8-5T – O.D. in inches (.375")**

**TSWTF-3/8-5T – Green**

**TSWTF-3/8-5T – Bulk Tubing**

## Colors

- ○ Natural, Translucent
- Colors available as custom run, see color code table

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			

## Notes

- Available in left- or right-hand cut. Please specify with proper suffix at end of part number (i.e. TSWTF-18-NT-R)
- Working Temperature: 500°F (260°C)
- Custom packaging, sizes and colors are available upon request
- Colors available as custom run, see color code table






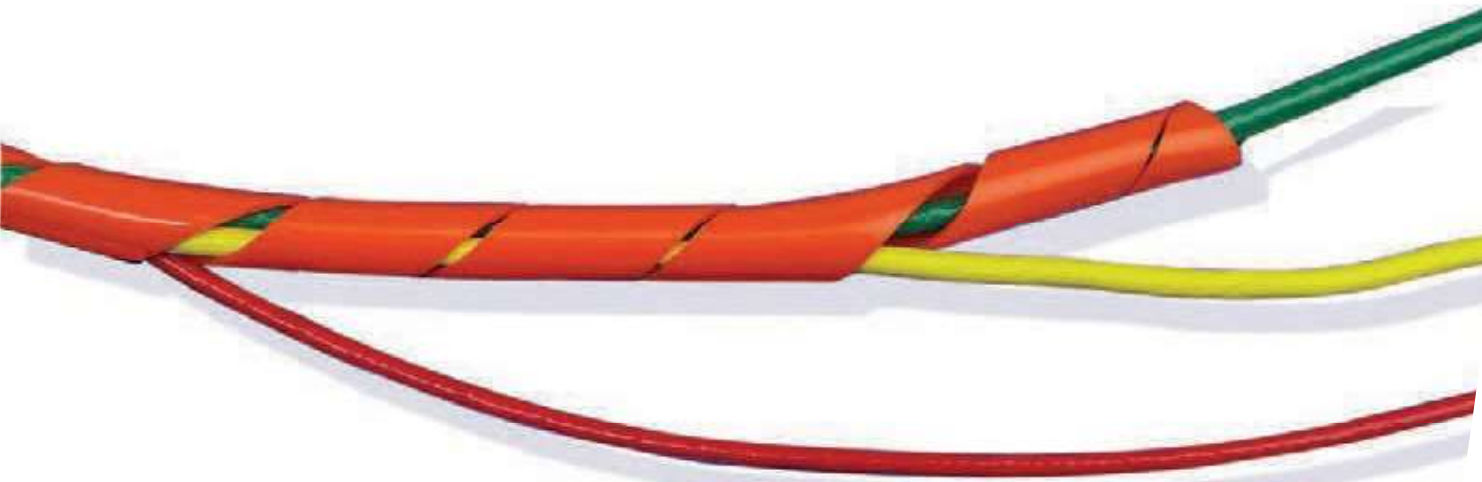
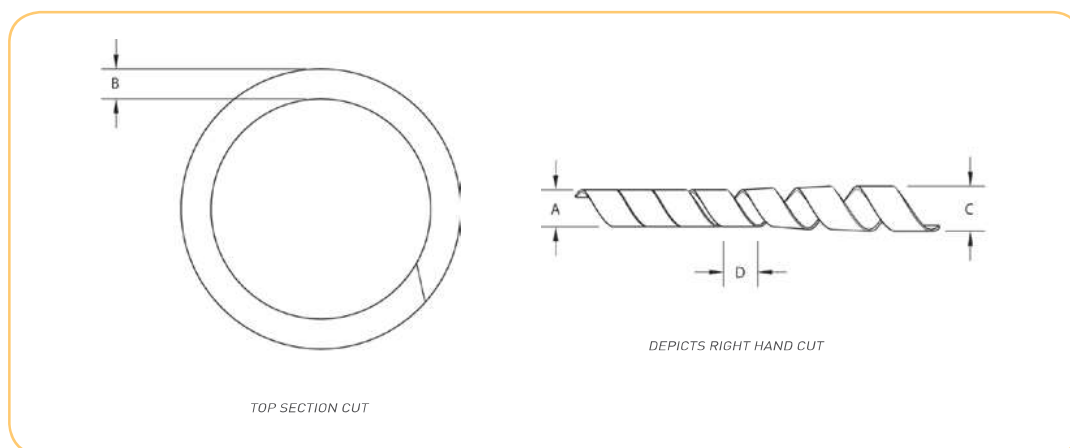
### WARNING

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## PTFE Spiral Wrap

Part Number	O.D. "A"		tolerance O.D.		Wall "B"		tolerance Wall		Pitch "D"		tolerance Pitch		Max Bundle O.D. "C"	
#														
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
TSWTF-1/8-NT	0.125	3.18	± 0.005	0.127	0.020	0.508	± 0.008	0.203	0.212	5.38	± 0.015	0.381	1/2	12.70
TSWTF-3/16-NT	0.188	4.78	± 0.005	0.127	0.030	0.762	± 0.008	0.203	0.312	7.92	± 0.015	0.381	1	25.40
TSWTF-1/4-NT	0.250	6.35	± 0.005	0.127	0.030	0.762	± 0.008	0.203	0.375	9.52	± 0.015	0.381	2	50.80
TSWTF-3/8-NT	0.375	9.52	± 0.005	0.127	0.030	0.762	± 0.008	0.203	0.437	11.10	± 0.015	0.381	2-1/2	63.50
TSWTF-1/2-NT	0.500	12.70	± 0.005	0.127	0.030	0.762	± 0.008	0.203	0.562	14.27	± 0.015	0.381	3	76.20
TSWTF-3/4-NT	0.750	19.05	± 0.005	0.127	0.040	1.02	± 0.008	0.203	0.875	22.22	± 0.015	0.381	4	101.60
TSWTF-1.00-NT	1	25.40	± 0.005	0.127	0.040	1.02	± 0.008	0.203	1	25.40	± 0.015	0.381	6	152.40

**WARNING**

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# PTFE Heat Shrinkable Tubing

Series 2:1 Fractional: HS2TFS, HS2TFT, HS2TFL, HS2TFI



## Features

- Virgin Polytetrafluoroethylene resin
- 2:1 Shrink Ratio
- Chemically inert
- Lowest coefficient of friction
- Superior dielectric strength
- Exceptional heat resistance
- Self extinguishing
- Non-wetting

## Certifications/Compliance

- ASTM D2902 Type I
- AMS 3653E
- VW1 and UL-83 (natural)
- FDA Compliant
- USP Class VI Compliant
- **Light Wall** (HS2TFL) – AMS-DTL-23053/12A Class 4
- **Thin Wall** (HS2TFT) – AMS-DTL-23053/12A Class 3, AMS 3585
- **Standard Wall** (HS2TFS) – AMS-DTL-23053/12A Class 2, AMS 3586
- **Heavy Wall** (HS2TFH) – AMS-DTL-23053/12A Class 1 (Custom Order only)

## Applications/Markets



- Electrical Insulation
- Protective Cover
- Electronic Harness
- Laboratory

## Order Information

**Example: HS2TFI7/8-NT**

**HS2TFI7/8-NT – Heat Shrink**

**HS2TFI7/8-NT – Shrink Ratio (2:1)**

**HS2TFI7/8-NT – PTFE**

**HS2TFI7/8-NT – Wall Type (Industrial Wall)**

**HS2TFI7/8-NT – Heat Shrink Size in inches (7/8")**

**HS2TFI7/8-NT – Natural**

**HS2TFI7/8-NT – Bulk Tubing**

## Colors

- ○ Natural, Opaque to translucent
- Colors available as custom run, see color code table

When ordering coiled tubing in colors, the color code is always followed by TC; when ordering cut lengths, the color code is followed by CC

i.e., HS2TFI7/8-2TC      i.e., HS2TFI7/8-0CC48.000

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			

## Notes

- Working Temperature: -100°F (-73°C) to +500°F (260°C)
- Shrink Temperature: 662°F (350°C) for 10 minutes per AMS-DTL-23053/12A
- \*Dielectric Strength:  $\geq 1,400$  V/M, per ASTM D 149 short term test of 10 MIL thickness (Volts/MIL)
- PTFE Fractional Heat Shrink tubing is available in stock packaging of 4-ft. straight lengths
- Custom packaging, sizes, lengths and colors are quoted upon request



### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

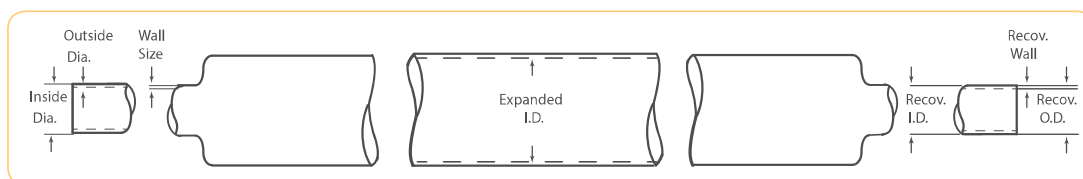


## HS2TFS & HS2TFT PTFE Fractional Heat Shrink Tubing (2:1) SW & TW

Order Size	Minimum Expanded I.D.		Maximum Recovered I.D.		Standard Wall				Thin Wall			
					Mil Spec*	Part Number	Nominal Recovered Wall		Mil Spec*	Part Number	Nominal Recovered Wall	
	inch	mm	inch	mm			inch	mm			inch	mm
1/8	0.215	05.5	0.130	3.3	23053/12A-215	HS2TFS1/8	0.020 ± 0.004	0.51 ± 0.10	23053/12A-319	HS2TFT1/8	0.015 ± 0.003	0.38 ± 0.08
1/4	0.410	10.4	0.260	6.6	23053/12A-222	HS2TFS1/4	0.020 ± 0.004	0.51 ± 0.10	23053/12A-326	HS2TFT1/4	0.015 ± 0.004	0.38 ± 0.10
5/16	0.470	11.9	0.329	8.4	23053/12A-225	HS2TFS5/16	0.020 ± 0.004	0.51 ± 0.10	23053/12A-329	HS2TFT5/16	0.015 ± 0.004	0.38 ± 0.10
3/8	0.560	14.2	0.399	10.1	23053/12A-228	HS2TFS3/8	0.025 ± 0.006	0.64 ± 0.15	-	HS2TF 3/8	0.015 ± 0.004	0.38 ± 0.10
7/16	0.655	16.6	0.462	11.7	23053/12A-229	HS2TFS7/16	0.025 ± 0.006	0.64 ± 0.15	-	HS2TFT7/16	0.018 ± 0.004	0.46 ± 0.10
1/2	0.750	19.1	0.524	13.3	23053/12A-230	HS2TFS1/2	0.025 ± 0.006	0.64 ± 0.15	-	HS2TFT1/2	0.018 ± 0.004	0.46 ± 0.10
5/8	0.930	23.6	0.655	16.6	23053/12A-231	HS2TFS5/8	0.030 ± 0.006	0.76 ± 0.15	-	HS2TF 5/8	0.020 ± 0.004	0.51 ± 0.10
3/4	1.125	28.6	0.786	20.0	23053/12A-232	HS2TFS3/4	0.035 ± 0.008	0.89 ± 0.20	-	HS2TFT3/4	0.025 ± 0.004	0.64 ± 0.10
7/8	1.130	28.7	0.911	23.1	23053/12A-233	HS2TFS7/8	0.035 ± 0.008	0.89 ± 0.20	-	HS2TFT7/8	0.025 ± 0.004	0.64 ± 0.10
1	1.500	38.1	1.036	26.3	23053/12A-234	HS2TFS1.00	0.035 ± 0.008	0.89 ± 0.20	-	HS2TFT1.00	0.025 ± 0.004	0.64 ± 0.10

## HS2TFL PTFE Fractional Heat Shrink Tubing (2:1) LW

Order Size	Minimum Expanded I.D.		Maximum Recovered I.D.		Light Wall			
					Mil Spec*	Part Number	Nominal Recovered Wall	
	inch	mm	inch	mm			inch	mm
1/8	0.215	5.5	0.130	3.3	23053/12A-415	HS2TFL1/8	0.008 ± 0.002	0.20 ± 0.05
1/4	0.410	10.4	0.260	6.6	23053/12A-422	HS2TFL1/4	0.010 ± 0.003	0.25 ± 0.08
5/16	0.470	11.9	0.329	8.4	23053/12A-425	HS2TFL5/16	0.012 ± 0.003	0.31 ± 0.08



## HS2TFI PTFE Fractional Heat Shrink Tubing (2:1), Ind. Heavy Wall

Part Number	Order Size	Mil Spec*	Minimum Expanded I.D.		Maximum Recovered I.D.		Nominal Recovered Wall	
			inch	mm	inch	mm	inch	mm
HS2TFI1/8	1/8	23053/12A-101	0.166	4.2	0.130	3.3	0.030 ± 0.005	0.76 ± 0.13
HS2TFI3/16	3/16	23053/12A-102	0.250	6.4	0.193	4.9	0.030 ± 0.005	0.76 ± 0.13
HS2TFI1/4	1/4	23053/12A-103	0.333	8.4	0.257	6.5	0.030 ± 0.005	0.76 ± 0.13
HS2TFI5/16	5/16	23053/12A-104	0.415	10.5	0.320	8.1	0.030 ± 0.005	0.76 ± 0.13
HS2TFI3/8	3/8	23053/12A-105	0.498	12.6	0.383	9.7	0.030 ± 0.005	0.76 ± 0.13
HS2TFI7/16	7/16	23053/12A-106	0.580	14.7	0.448	11.4	0.030 ± 0.006	0.76 ± 0.15
HS2TFI1/2	1/2	23053/12A-107	0.666	16.9	0.510	13.0	0.030 ± 0.006	0.76 ± 0.15
HS2TFI9/16	9/16	23053/12A-108	0.748	19.0	0.572	14.5	0.030 ± 0.006	0.76 ± 0.15
HS2TFI5/8	5/8	23053/12A-109	0.830	21.1	0.637	16.2	0.030 ± 0.006	0.76 ± 0.15
HS2TFI11/16	11/16	23053/12A-110	0.915	23.2	0.700	17.8	0.032 ± 0.006	0.81 ± 0.15
HS2TFI3/4	3/4	23053/12A-111	1.000	25.4	0.764	19.4	0.040 ± 0.007	1.02 ± 0.18
HS2TFI7/8	7/8	23053/12A-112	1.170	29.7	0.891	22.6	0.045 ± 0.007	1.14 ± 0.18
HS2TFI1.00	1	23053/12A-113	1.330	33.8	1.020	25.9	0.050 ± 0.008	1.27 ± 0.20



### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# PTFE Heat Shrinkable Tubing

Series 2:1 AWG: HS2TFS, HS2TFT, HS2TFL



## Features

- Virgin Polytetrafluoroethylene resin
- 2:1 Shrink Ratio
- Chemically inert
- Lowest coefficient of friction
- Superior dielectric strength
- Exceptional heat resistance
- Self extinguishing
- Non-wetting

## Certifications/Compliance

- ASTM D2902 Type I
- AMS 3653E
- VW1 and UL-83 (natural)
- FDA Compliant
- USP Class VI Compliant
- **Light Wall** (HS2TFL) – AMS-DTL-23053/12A Class 4
- **Thin Wall** (HS2TFT) – AMS-DTL-23053/12A Class 3, AMS 3585
- **Standard Wall** (HS2TFS) – AMS-DTL-23053/12A Class 2, AMS 3586
- **Heavy Wall** (HS2TFH) – AMS-DTL-23053/12A Class 1 (Custom Order only)

## Applications/Markets



- Electrical Insulation
- Protective Cover
- Electronic Harness
- Laboratory

## Order Information

**Example: HS2TFS15-4TC-500**

**HS2TFS15-4TC-500 – Heat Shrink**

**HS2TFS15-4TC-500 – Shrink Ratio (2:1)**

**HS2TFS15-4TC-500 – PTFE**

**HS2TFS15-4TC-500 – Wall Type (Standard Wall)**

**HS2TFS15-4TC-500 – Heat Shrink Size in AWG (AWG15)**

**HS2TFS15-4TC-500 – Yellow**

**HS2TFS15-4TC-500 – Bulk Tubing**

**HS2TFS15-4TC-500 – Solid Color**

**HS2TFS15-4TC-500 – Package Quantity in feet (500')**

## Colors

- ○ Natural, Opaque to translucent
- Colors available as custom run, see color code table

When ordering coiled tubing in colors, the color code is always followed by TC; when ordering cut lengths, the color code is followed by CC

i.e., HS2TFS15-2TC      i.e., HS2TFS15-0CC48.000

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			

## Notes

- Working Temperature: -100°F (-73°C) to +500°F (260°C)
- Shrink Temperature: 662°F (350°C) for 10 minutes AMS-DTL-23053/12A
- \*Dielectric Strength:  $\geq 1,400$  V/M, per ASTM D 149 short term test of 10 MIL thickness (Volts/MIL)
- PTFE AWG Heat Shrink tubing is available in stock packaging of 4-ft. straight lengths
- Custom packaging, sizes, lengths and colors are quoted upon request



### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

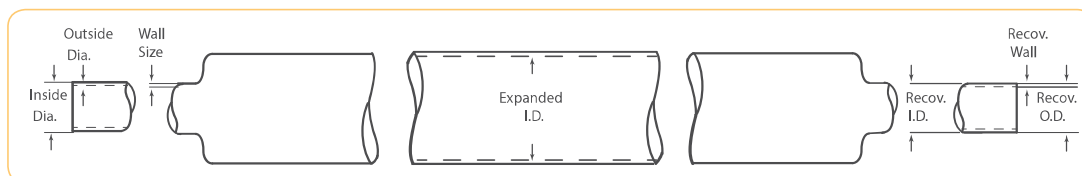


**HS2TFS Standard Wall (2:1)**

Part Number	Order Size AWG	Mil Spec*	Minimum Expanded I.D.		Maximum Recovered I.D.		Nominal Recovered Wall	
			inch	mm	inch	mm	inch	mm
HS2TFS24	24	23053/12A-201	0.050	1.27	0.027	0.69	0.012 ± 0.002	0.31 ± 0.05
HS2TFS22	22	23053/12A-202	0.055	1.40	0.032	0.81	0.012 ± 0.002	0.31 ± 0.05
HS2TFS20	20	23053/12A-203	0.060	1.52	0.039	0.99	0.016 ± 0.003	0.41 ± 0.08
HS2TFS19	19	23053/12A-204	0.065	1.65	0.043	1.09	0.016 ± 0.003	0.41 ± 0.08
HS2TFS18	18	23053/12A-205	0.076	1.93	0.049	1.25	0.016 ± 0.003	0.41 ± 0.08
HS2TFS17	17	23053/12A-206	0.085	2.16	0.054	1.37	0.016 ± 0.003	0.41 ± 0.08
HS2TFS16	16	-	0.093	2.36	0.061	1.55	0.016 ± 0.003	0.41 ± 0.08
HS2TFS15	15	23053/12A-207	0.110	2.79	0.067	1.70	0.016 ± 0.003	0.41 ± 0.08
HS2TFS14	14	23053/12A-208	0.120	3.05	0.072	1.83	0.016 ± 0.003	0.41 ± 0.08
HS2TFS13	13	23053/12A-210	0.140	3.56	0.080	2.03	0.016 ± 0.003	0.41 ± 0.08
HS2TFS12	12	23053/12A-211	0.150	3.81	0.089	2.26	0.016 ± 0.003	0.41 ± 0.08
HS2TFS11	11	23053/12A-212	0.170	4.32	0.101	2.57	0.016 ± 0.003	0.41 ± 0.08
HS2TFS10	10	23053/12A-213	0.191	4.85	0.112	2.84	0.016 ± 0.003	0.41 ± 0.08
HS2TFS09	9	23053/12A-214	0.205	5.21	0.124	3.15	0.020 ± 0.004	0.51 ± 0.10
HS2TFS08	8	23053/12A-216	0.240	6.10	0.141	3.58	0.020 ± 0.004	0.51 ± 0.10
HS2TFS07	7	23053/12A-217	0.270	6.86	0.158	4.01	0.020 ± 0.004	0.51 ± 0.10
HS2TFS06	6	23053/12A-218	0.302	7.67	0.178	4.52	0.020 ± 0.004	0.51 ± 0.10
HS2TFS05	5	23053/12A-219	0.320	8.13	0.198	5.03	0.020 ± 0.004	0.51 ± 0.10
HS2TFS04	4	23053/12A-220	0.370	9.40	0.224	5.69	0.020 ± 0.004	0.51 ± 0.10
HS2TFS03	3	23053/12A-221	0.390	9.91	0.249	6.32	0.020 ± 0.004	0.51 ± 0.10
HS2TFS02	2	23053/12A-223	0.430	10.9	0.278	7.06	0.020 ± 0.004	0.51 ± 0.10
HS2TFS01	1	23053/12A-224	0.450	11.4	0.311	7.90	0.020 ± 0.004	0.51 ± 0.10
HS2TFS00	0	23053/12A-226	0.470	11.9	0.347	8.81	0.020 ± 0.004	0.51 ± 0.10

**Certifications/Compliance**

- AMS-DTL-23053/12A, Class 3
- AMS 3585
- ASTM D2902 Type I
- FDA Compliant
- USP Class VI Compliant

**WARNING**

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Certifications/Compliance

- AMS-DTL-23053/12A, Class 3
- AMS 3585
- ASTM D2902 Type I
- FDA Compliant
- USP Class VI Compliant



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**HS2TFL Light Wall (2:1)**

Part Number	Order Size AWG	Mil Spec**	Minimum Expanded I.D.		Maximum Recovered I.D.		Nominal Recovered Wall	
			inch	mm	inch	mm	inch	mm
HS2TFL24	24	23053/12A-404	0.050	1.27	0.025	0.64	0.006 ± 0.002	0.15 ± 0.05
HS2TFL22	22	23053/12A-405	0.055	1.40	0.031	0.79	0.006 ± 0.002	0.15 ± 0.05
HS2TFL20	20	23053/12A-406	0.060	1.52	0.038	0.97	0.006 ± 0.002	0.15 ± 0.05
HS2TFL19	19	23053/12A-407	0.065	1.65	0.043	1.09	0.006 ± 0.002	0.15 ± 0.05
HS2TFL18	18	23053/12A-408	0.076	1.93	0.046	1.17	0.006 ± 0.002	0.15 ± 0.05
HS2TFL17	17	23053/12A-409	0.085	2.16	0.054	1.37	0.006 ± 0.002	0.15 ± 0.05
HS2TFL16	16	23053/12A-410	0.093	2.36	0.057	1.45	0.006 ± 0.002	0.15 ± 0.05
HS2TFL15	15	23053/12A-411	0.110	2.79	0.063	1.60	0.006 ± 0.002	0.15 ± 0.05
HS2TFL14	14	23053/12A-412	0.120	3.05	0.072	1.83	0.008 ± 0.002	0.20 ± 0.05
HS2TFL13	13	23053/12A-413	0.140	3.56	0.080	2.03	0.008 ± 0.002	0.20 ± 0.05
HS2TFL12	12	23053/12A-414	0.150	3.81	0.089	2.26	0.008 ± 0.002	0.20 ± 0.05
HS2TFL11	11	23053/12A-416	0.170	4.32	0.099	2.51	0.008 ± 0.002	0.20 ± 0.05
HS2TFL10	10	23053/12A-417	0.191	4.85	0.110	2.79	0.008 ± 0.002	0.20 ± 0.05
HS2TFL09	9	23053/12A-418	0.205	5.21	0.122	3.10	0.008 ± 0.002	0.20 ± 0.05
HS2TFL08	8	23053/12A-420	0.240	6.10	0.139	3.53	0.008 ± 0.002	0.20 ± 0.05
HS2TFL07	7	23053/12A-421	0.270	6.86	0.154	3.91	0.008 ± 0.002	0.20 ± 0.05
HS2TFL06	6	23053/12A-422	0.302	7.67	0.172	4.37	0.010 ± 0.003	0.25 ± 0.08
HS2TFL05	5	23053/12A-423	0.320	8.13	0.192	4.88	0.010 ± 0.003	0.25 ± 0.08
HS2TFL04	4	23053/12A-424	0.370	9.40	0.214	5.44	0.010 ± 0.003	0.25 ± 0.08
HS2TFL03	3	23053/12A-425	0.390	9.91	0.241	6.12	0.010 ± 0.003	0.25 ± 0.08
HS2TFL02	2	23053/12A-427	0.430	10.9	0.270	6.88	0.010 ± 0.003	0.25 ± 0.08
HS2TFL01	1	23053/12A-428	0.450	11.4	0.301	7.65	0.010 ± 0.003	0.25 ± 0.08
HS2TFL00	0	23053/12A-430	0.470	11.9	0.347	8.81	0.012 ± 0.003	0.31 ± 0.08

\*Dielectric Strength: ≥ 1,400 V/M, per ASTM D 149 short term test of 10 MIL thickness (Volts/MIL)

## Certifications/Compliance

- AMS-DTL-23053/12A, Class 4
- ASTM D2902 Type I
- FDA Compliant
- USP Class VI Compliant



### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# PTFE Heat Shrinkable Tubing

## Series 4:1 HS4TFI



### Features

- Virgin Polytetrafluoroethylene resin
- 4:1 Shrink Ratio
- Chemically inert
- Lowest coefficient of friction
- Superior dielectric strength
- Exceptional heat resistance
- Self extinguishing
- Non-wetting

### Applications/Markets



- Electrical Insulation
- Protective Cover
- Rollers
- Bulb Protection

### Certifications/Compliance

- AMS-DTL-23053/12A, Class 5
- ASTM D2902 Type I
- AMS 3584A
- VW1 and UL-83 (natural)
- FDA Compliant
- USP Class VI Compliant

### Order Information

#### Example: HS4TFI5/8-NT

**HS4TFI5/8-NT – Heat Shrink**

**HS4TFI5/8-NT – Shrink Ratio (4:1)**

**HS4TFI5/8-NT – PTFE**

**HS4TFI5/8-NT – Wall Type (Industrial Wall)**

**HS4TFI5/8-NT – Heat Shrink Size in inches (5/8")**

**HS4TFI5/8-NT – Natural**

**HS4TFI5/8-NT – Bulk Tubing**

### Colors

- ○ Natural, Opaque to translucent
- Colors available as custom run, see color code table

When ordering coiled tubing in colors, the color code is always followed by TC; when ordering cut lengths, the color code is followed by CC

i.e., HS4TFI5/8-2TC    i.e., HS4TFI5/8-0CC48.0000

Color Code						
○	N	Natural	●	5	Green	
●	0	Black	●	6	Blue	
●	1	Brown	●	7	Violet	
●	2	Red	●	8	Gray	
●	3	Orange	○	9	White	
●	4	Yellow				

### Notes

- Working Temperature: -500°F (260°C) Shrink Temperature: 662°F (350°C) for 10 minutes AMS-DTL-23053/12A
- For full recovery, expanded diameter should be 50% larger than the diameter of the object to be recovered over
- \*Dielectric Strength:  $\geq 1,400$  V/M, per ASTM D 149 short term test of 10 MIL thickness (Volts/MIL)
- PTFE Fractional Heat Shrink tubing is available in stock packaging of 4-ft. straight lengths
- Custom packaging, sizes, lengths and colors are quoted upon request



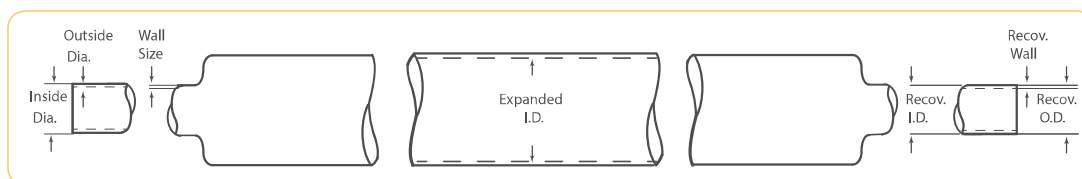
#### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



**HS4TFI PTFE Industrial Wall Heat Shrink Tubing (4:1)**

Part Number	Order Size inch	Mil Spec**	Minimum Expanded I.D.		Maximum Recovered I.D.		Nominal Recovered Wall	
			inch	mm	inch	mm	inch	mm
HS4TFI5/64	5/64	23053/12A-501	0.078	1.98	0.025	0.64	0.009 ± 0.002	0.23 ± 0.05
HS4TFI1/8	1/8	23053/12A-502	0.125	3.18	0.037	0.94	0.012 ± 0.002	0.31 ± 0.05
HS4TFI3/16	3/16	23053/12A-503	0.187	4.75	0.050	1.27	0.012 ± 0.002	0.31 ± 0.05
HS4TFI1/4	1/4	23053/12A-504	0.250	6.35	0.063	1.60	0.012 ± 0.002	0.31 ± 0.05
HS4TFI5/16	5/16	23053/12A-505	0.312	7.92	0.078	1.98	0.012 ± 0.002	0.31 ± 0.05
HS4TFI3/8	3/8	23053/12A-506	0.375	9.52	0.096	2.44	0.012 ± 0.002	0.31 ± 0.05
HS4TFI7/16	7/16	23053/12A-507	0.438	11.1	0.112	2.84	0.012 ± 0.002	0.31 ± 0.05
HS4TFI1/2	1/2	23053/12A-508	0.500	12.7	0.144	3.66	0.015 ± 0.004	0.38 ± 0.10
HS4TFI5/8	5/8	23053/12A-510	0.625	15.9	0.178	4.52	0.015 ± 0.004	0.38 ± 0.10
HS4TFI3/4	3/4	23053/12A-512	0.750	19.1	0.224	5.70	0.015 ± 0.004	0.38 ± 0.10
HS4TFI7/8	7/8	23053/12A-513	0.875	22.2	0.244	6.20	0.015 ± 0.004	0.38 ± 0.10
HS4TFI1.00	1	23053/12A-514	1.000	25.4	0.278	7.06	0.015 ± 0.004	0.38 ± 0.10
HS4TFI1.25	1-1/4	23053/12A-515	1.250	31.8	0.347	8.81	0.015 ± 0.004	0.38 ± 0.10

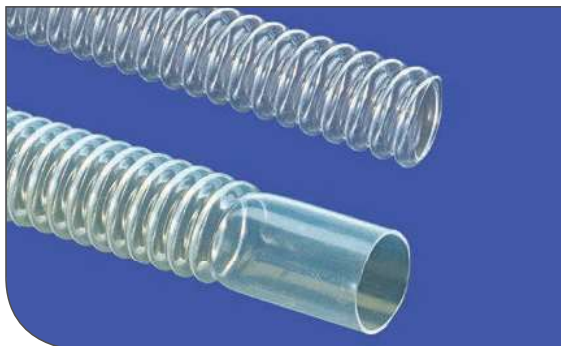
**WARNING**

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# PTFE Convoluted

## Series Convo-Tex®



### Features

- Chemically inert
- Low coefficient of friction
- Very flexible
- Self extinguishing
- Non-wetting

### Certifications/Compliance

- AMS 3653E
- VW1 and UL-83 (natural)
- FDA Compliant
- USP Class VI Compliant

### Applications/Markets



- Fluid Transport
- Wire Harness
- Protection/Cable Core
- Robotics

### Order Information

**Example: CV01-1/8-NT**

**CV01-1/8-NT – Convoluted**

**CV01-1/8-NT – PTFE**

**CV01-1/8-NT – Size to Order (1/8")**

**CV01-1/8-NT – Color (N=Natural)**

**CV01-1/8-NT- “T” is bulk** (for cuffed tubing, remove “T” and add length, ie. CV01-1/8-N1200 = 1" Convo, natural, cut 12" long)

### Colors

- ○ Natural, Opaque to Translucent
- Colors available as custom run, see color code table

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			

### Notes

- Working Temperature: -100°F (-75°C) to +500°F (260°C)
- Standard cuffs for Convo-Tex are sized on the Inside Diameter
- Wire wrap reinforcement can be added for increased pressure applications or when a tighter bend radius is needed
- Custom packaging, sizes, lengths and colors are quoted upon request



#### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

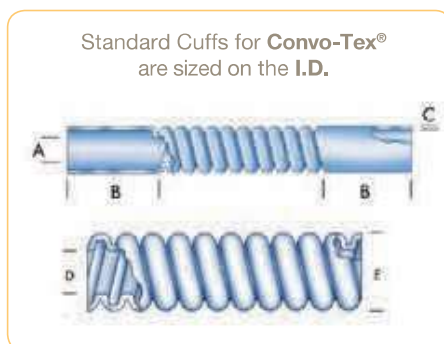


**PTFE Convo-Tex® Convoluted**

(Standard tubing is natural)

Part Number	Size To Order	Standard Cuff I.D. "A"		Standard Cuff Length "B"		Wall Thickness "C"		Min. Inside Diameter "D"		Max. Inside Diameter "D"		Max. Outside Diameter "E"		**Min. Bend Radius	
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
CV01-1/8-NT	CONV-2	1/8	3.18	3/4	19.1	0.010	0.25	0.130	3.3	0.140	3.6	0.235	5.9	3/8	9.5
CV01-1/4-NT	CONV-4	1/4	6.35	3/4	19.1	0.015	0.38	0.181	4.6	0.188	4.8	0.320	8.1	1/2	12.7
CV01-5/16-NT	CONV-5	5/16	7.94	1	25.4	0.020	0.51	0.273	6.9	0.281	7.1	0.414	10.5	3/4	19.1
CV01-3/8-NT	CONV-6	3/8	9.53	1	25.4	0.020	0.51	0.303	7.7	0.312	7.9	0.450	11.4	1-3/4	44.4
CV01-1/2-NT	CONV-8	1/2	12.7	1	25.4	0.020	0.51	0.425	10.8	0.437	11.1	0.590	15.0	1-1/4	31.2
CV01-5/8-NT	CONV-10	5/8	15.9	1-1/4	31.8	0.025	0.64	0.485	12.3	0.500	12.7	0.660	16.8	1-1/2	38.1
CV01-3/4-NT	CONV-12	3/4	19.1	1-1/2	38.1	0.023	0.58	0.608	15.4	0.625	15.9	0.780	19.8	1-3/4	44.4
CV01-1.00-NT	CONV-16	1	25.4	2	50.8	0.030	0.76	0.849	21.6	0.875	22.2	1.100	27.9	2-1/4	57.2
CV01-1.25-NT	CONV-20	1-1/4	31.8	2-1/2	63.5	0.035	0.89	1.150	29.2	1.190	30.2	1.560	39.6	2-3/4	69.9
CV01-1.50-NT	CONV-24	1-1/2	38.1	2-1/2	63.5	0.040	1.02	1.410	35.8	1.490	37.8	1.910	48.5	3	76.2
CV01-2.00-NT	CONV-32	2	50.8	2-1/2	63.5	0.043	1.09	1.955	49.7	1.985	50.4	2.450	62.2	4-1/4	107.9
CV01-2.50-NT	CONV-40	2-1/2	63.5	2-1/2	63.5	0.062	1.57	2.460	62.5	2.540	64.5	3.210	81.6	5	127
CV01-3.00-NT	CONV-48	3	76.2	2-1/2	63.5	0.070	1.78	2.940	74.7	3.060	77.7	3.750	95.3	7	177.8
CV01-4.00-NT	CONV-64	4	101.6	2-1/2	63.5	0.070	1.78	3.940	100.1	4.060	103.1	4.750	120.6	9	228.6

\*\* Minimum 36" length.

**WARNING**

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# PTFE Convoluted

## Series Low Profile and Heavy Wall



### Features

- Chemically inert
- Low coefficient of friction
- Very flexible
- Self extinguishing
- Non-wetting

### Low Profile

- Larger inside diameter
- Increased Flow

### Heavy Wall

- Reinforces the strength of the tube allowing for braiding or covering, flanging or flaring
- Handles higher vacuum

### Certifications/Compliance

- AMS 3653E
- VW1 and UL-83
- FDA Compliant
- USP Class VI Compliant

### Applications/Markets



- Fluid Handling
- Harnesses
- Lab Equipment
- Robotics

### Order Information

**Example: CVH01-1/8-NT**

**CVH01-1/8-NT** – CVH – Heavywall Convoluted  
– CVL Low Profile Convoluted

CVH01-1/8-NT – PTFE

CVH01-1/8-NT – Size to Order (1/8")

CVH01-1/8-NT – Color (N=Natural)

CVH01-1/8-NT – "T" is bulk (for cuffed tubing, remove "T" and add length, ie. CVH01-1/8-N1200 = 1" Heavy Wall Convo, natural, cut 12" long)

### Colors

- O Natural, Opaque to Translucent
- Colors available as custom run, see color code table

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			

### Notes

- Working Temperature: 500°F (260°C)
- Standard cuffs for Convo-Tex are sized on the Inside Diameter
- Wire wrap reinforcement can be added for increased pressure applications or when a tighter bend radius is needed
- Custom packaging, sizes, lengths, cuffs and colors are quoted upon request



#### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

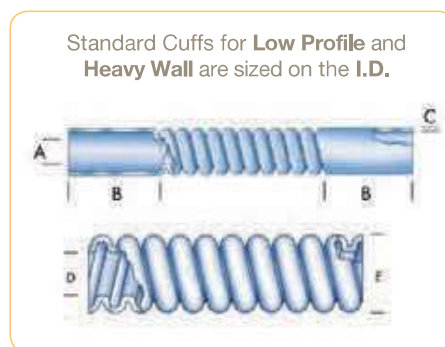


**PTFE Low Profile Convoluted**

(Standard tubing is natural)

Part Number	Size To Order	Min. Inside Diameter		Max. Inside Diameter		Max. Outside Diameter		Wall Thickness		**Min. Bend Radius	
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
CVL01-3/8-NT	3/8	0.394	10.0	0.406	10.3	0.560	14.2	0.023	0.58	1/2	13
CVL01-1/2-NT	1/2	0.490	12.5	0.510	13.0	0.700	17.8	0.025	0.64	3/4	19
CVL01-3/4-NT	3/4	0.740	18.8	0.760	19.3	0.980	24.9	0.035	0.89	1.88	48
CVL01-1.00-NT	1	0.990	25.1	1.010	25.7	1.260	32.0	0.035	0.89	2-1/4	57
CVL01-1.25-NT	1-1/4	1.210	30.7	1.250	31.8	1.539	39.1	0.035	0.89	3	76
CVL01-1.50-NT	1-1/2	1.520	38.6	1.540	39.1	1.870	47.5	0.044	1.12	3-1/2	89
CVL01-1.75-NT	1-3/4	1.690	42.9	1.750	44.5	2.100	53.3	0.040	1.02	4-1/4	108
CVL01-2.00-NT	2	2.010	51.1	2.030	51.6	2.370	60.2	0.043	1.09	4-3/4	121

\*\* Minimum 36 length.

**PTFE Heavy Wall Convoluted**

(Standard tubing is natural)

Part Number	Size To Order	Min. Inside Diameter		Max. Inside Diameter		Max. Outside Diameter		Wall Thickness		**Min. Bend Radius	
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
CVH01-1/4-NT	1/4	0.257	6.5	0.265	6.7	0.415	10.5	0.025	0.38	3/4	19
CVH01-3/8-NT	3/8	0.335	8.5	0.345	8.8	0.510	13.0	0.025	0.64	1	25
CVH01-1/2-NT	1/2	0.454	11.5	0.466	11.8	0.700	17.8	0.035	0.89	1-1/2	38
CVH01-3/4-NT	3/4	0.683	17.4	0.701	17.8	1.010	25.7	0.050	1.27	1.88	48
CVH01-1.00-NT	1	0.841	21.4	0.859	21.8	1.210	30.7	0.053	1.35	2-1/2	64
CVH01-1.25-NT	1-1/4	1.125	28.6	1.145	29.1	1.610	40.9	0.062	1.57	3.13	79
CVH01-1.50-NT	1-1/2	1.420	36.1	1.480	37.6	1.880	47.8	0.062	1.57	3-3/4	95
CVH01-1.75-NT	1-3/4	1.540	39.1	1.600	40.6	2.100	53.3	0.062	1.57	4-1/2	114
CVH01-2.00-NT	2	1.770	45.0	1.830	46.5	2.432	61.8	0.062	1.57	4-3/4	120
CVH01-2.50-NT	2-1/2	2.460	62.5	2.540	64.5	3.210	81.5	0.062	1.57	5	127
CVH01-3.00-NT	3	2.940	74.7	3.060	77.7	3.750	95.3	0.062	1.57	7	178
CVH01-4.00-NT	4	3.90	100	4.060	103	4.750	121	0.070	1.77	9	229

\*\* Minimum 36 length.

**WARNING**

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# PTFE Convoluted

## Series AMS-T-81914/1 and AMS-T-81914/2



### Features

- Chemically inert
- Low coefficient of friction
- Very flexible
- Self extinguishing
- Non-wetting

### Certifications/Compliance

- AMS 3653E
- AMS-T-81914/1
- AMS-T-81914/2
- FDA Compliant

### Applications/Markets



- Fluid Handling
- Harnesses
- Crush Resistant Cover
- Robotics

### Order Information

**Example: 81914/1-1010-0TC**

**81914/1-1010-0TC – AMS-T-81914 Convoluted**

81914/**1**-1010-0TC – **PTFE**

81914/1-**1010**-0TC – **Helical Convolutions**

81914/1-10**10**-0TC – **Size (10=1.000")**

81914/1-1010-**0**TC – **Color (0=Black)**

81914/1-1010-0**TC** – **"T" is bulk** - (for cuffed tubing, remove "T" and add length, ie. 81914/1-1010-01200 = 187" Convo, black, cut 12" long)

### Colors

- ● Black
- Colors available as custom run, see color code table

When ordering convoluted tubing in colors, the "N" designation for natural should be replaced by the correct color designator;

i.e., 81914/1-101-0T (black bulk tubing)

i.e., 81914/1-101-01200 (black tubing - 12 inches long)

Color Code						
○	N	Natural		●	5	Green
●	0	Black		●	6	Blue
●	1	Brown		●	7	Violet
●	2	Red		●	8	Gray
●	3	Orange		○	9	White
●	4	Yellow				

### Notes

- Working Temperature: 500°F (260°C)
- Tubing is provided in black without cuffs direct from inventory
- Stock packaging is random coils
- Also available in close convolution 81914/2
- Custom packaging, sizes, lengths, cuffs and colors are quoted upon request



#### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



**PTFE Convuluted Tubing (AMS-T-81914/1)**

(Standard tubing is black)

Part Number	MIL Spec*	Maximum Inside Diameter		Minimum Inside Diameter		Maximum Outside Diameter		Maximum Wall Thickness		Minimum Bend Radius		Pitch	Weight	
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		lb./100 ft.	kg./100 mtr.
81914/1-1001-OTC	-1	0.188	4.78	0.181	4.6	0.320	8.13	0.023	0.584	1/2	13	8	2	2.98
81914/1-1002-OTC	-2	0.281	7.14	0.273	6.93	0.414	10.5	0.027	0.686	3/4	19	7.5	2.9	4.32
81914/1-1003-OTC	-3	0.312	7.93	0.303	7.7	0.450	11.4	0.027	0.686	7/8	22	7.5	3.6	5.36
81914/1-1004-OTC	-4	0.375	9.53	0.364	9.25	0.530	13.5	0.029	0.737	1	25	7	4.2	6.25
81914/1-1005-OTC	-5	0.437	11.1	0.425	10.8	0.590	15.0	0.029	0.737	1-1/4	32	7	4.9	7.29
81914/1-1006-OTC	-6	0.500	12.7	0.485	12.3	0.660	16.8	0.029	0.737	1-1/2	38	7	5.2	7.74
81914/1-1007-OTC	-7	0.625	15.9	0.608	15.4	0.780	19.9	0.035	0.889	1-3/4	44	7	6.9	10.3
81914/1-1008-OTC	-8	0.750	19.1	0.730	18.5	0.975	24.8	0.035	0.889	1.88	48	6	10.4	15.5
81914/1-1009-OTC	-9	0.875	22.2	0.850	21.6	1.100	27.9	0.035	0.889	2-1/4	57	6	11.3	16.8
81914/1-1010-OTC	-10	1.000	25.4	0.975	24.8	1.260	32.0	0.035	0.889	2-1/2	64	4.5	12.6	18.8
81914/1-1011-OTC	-11	1.125	28.6	1.100	27.9	1.390	35.3	0.035	0.889	2-3/4	70	4.5	13.8	20.5
81914/1-1012-OTC	-12	1.250	31.8	1.210	30.7	1.539	39.1	0.035	0.889	3	76	4	15.5	23.1
81914/1-1013-OTC	-13	1.500	38.1	1.440	36.6	1.850	47.0	0.040	1.020	3.75	95	4	21.7	32.3
81914/1-1014-OTC	-14	1.750	44.5	1.690	42.9	2.100	53.3	0.045	1.140	4.25	108	4	25.3	37.6
81914/1-1015-OTC	-15	2.000	50.8	1.940	49.3	2.350	59.7	0.045	1.140	4.75	121	4	29	43.2

\*PTFE convuluted tubing is provided in BLACK without cuffs direct from the factory. Black part numbers are designated with "OT" and Natural part numbers are designated with "NT" after the Mil Spec number (i.e., 81914/1-1014-OT).

Standard Cuffs for  
81914/1 are sized  
on the I.D.



Without Cuffs



With Cuffs

**WARNING**

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# FEP Tubing

Series Fractional & Metric: 103, 203



## Features

- Virgin Fluorinated Ethylene Propylene resin
- Translucent
- Chemically inert
- Long continuous lengths
- Low coefficient of friction
- Self extinguishing
- Non-wetting
- Weldable

## Certifications/Compliance

- ASTM D2116-07
- FDA Compliant
- VW1 and UL-83 (natural)
- USP Class VI Compliant

## Applications/Markets



- Nitrogen Transfer
- Down Hole Pump
- Ozone Sampling
- Food & Beverage
- Optical Sensor
- Catheter Repair
- Laboratory
- Syringe Tips

## Order Information

**Example: 103-0250031-NT-100**

103-0250031-NT-100 – **Fractional**

103-0250031-NT-100 – **FEP**

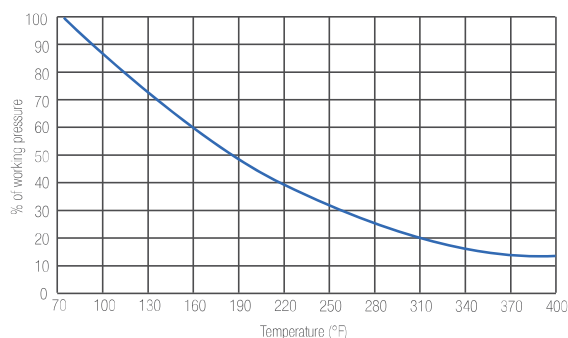
103-**0250**031-NT-100 – **Tube O.D.** in inches (**1/4"**)

103-0250**031**-NT-100 – **Tube Wall Thickness** in inches (**.031"**)

103-0250031-**NT**-100 – **Natural**

103-0250031-NT-**100** – **Package Quantity** in feet (**100'**)

## FEP Tubing (Series 103, 203) Maximum Working Pressure (bar)



### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Fittings

Fittings available for sizes 1/8" up to 1"

Parker Fittings available from:  
Fluid System Connectors Division  
Otsego, MI (269) 692-6555 (269) 692-6634 FAX

FSC Product Families:

- Compression
- Compress-Align®
- Metric Compression
- Flow-Controls
- Prestolok Composite
- Prestolok All-Metal
- Prestolok Stainless
- TrueSeal™

## Notes

- Working Temperature: -100°F (-75°C) to +400°F (204°C)
- Working pressure calculated using a Design Factor of 4 at 73°F (23°C)
- Custom packaging and sizes are quoted upon request

## Options

- Smoothbore
- Retractable Coils
- Convolved
- Paratubing
- Corrugated

## Colors

- ○ Natural, Translucent
- Colors available as custom run, see color code table

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			



## 103 FEP Industrial Wall Fractional Size Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	inch	inch	tol.	mm	tol.	inch	tol.	mm	tol.	inch	mm	psi 73°F	bar 23°C	psi 73°F	bar 23°C	inch	mm	at 73°F	lb. per ft.	kg. per m.
103-0094031	3/32	0.094	± 0.005	2.40	± 0.127	0.031	± 0.002	0.79	± 0.051	0.031	0.79	630	43	2520	174	0.500	13	28	0.006	0.009
103-0125031	1/8	0.125	± 0.003	3.18	± 0.076	0.062	± 0.003	1.57	± 0.076	0.031	0.79	470	32	1880	130	0.375	10	28	0.009	0.013
103-0156031	5/32	0.157	± 0.005	3.99	± 0.127	0.094	± 0.005	2.39	± 0.127	0.031	0.79	360	25	1440	99	0.375	10	28	0.011	0.017
103-0188031	3/16	0.188	± 0.005	4.78	± 0.127	0.125	± 0.005	3.18	± 0.127	0.031	0.79	290	20	1160	80	0.750	19	28	0.014	0.021
103-0250031	1/4	0.250	± 0.005	6.35	± 0.127	0.188	± 0.005	4.78	± 0.127	0.031	0.79	210	14	840	58	1.750	44	28	0.020	0.030
103-0312031	5/16	0.312	± 0.005	7.92	± 0.127	0.250	± 0.005	6.35	± 0.127	0.031	0.79	160	11	640	44	2.250	57	28	0.025	0.038
103-0375031	3/8	0.375	± 0.005	9.52	± 0.127	0.312	± 0.005	7.92	± 0.127	0.031	0.79	130	9	520	36	2.750	70	28	0.031	0.047
103-0438031	7/16	0.438	± 0.005	11.13	± 0.127	0.375	± 0.005	9.52	± 0.127	0.031	0.79	110	8	440	30	4.000	102	28	0.037	0.055
103-0500031	1/2	0.500	± 0.006	12.70	± 0.152	0.438	± 0.006	11.13	± 0.152	0.031	0.79	90	6	360	25	4.000	102	28	0.043	0.063
103-0563031	9/16	0.563	± 0.006	14.30	± 0.152	0.500	± 0.006	12.70	± 0.152	0.031	0.79	80	6	320	22	5.000	127	28	0.054	0.080

## 103 FEP Heavy Wall Fractional Size Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	inch	inch	tol.	mm	tol.	inch	tol.	mm	tol.	inch	mm	psi 73°F	bar 23°C	psi 73°F	bar 23°C	inch	mm	at 73°F	lb. per ft.	kg. per m.
103-0188062	3/16	0.188	± 0.005	4.78	± 0.127	0.064	± 0.005	1.63	± 0.127	0.062	1.57	630	43	2520	174	0.250	6	28	0.023	0.034
103-0250040	1/4	0.250	± 0.005	6.35	± 0.127	0.170	± 0.005	4.32	± 0.127	0.040	1.02	280	19	1120	77	1.250	32	28	0.025	0.037
103-0250047	1/4	0.250	± 0.005	6.35	± 0.127	0.156	± 0.005	3.96	± 0.127	0.047	1.19	340	23	1360	94	0.750	19	28	0.028	0.042
103-0250062	1/4	0.250	± 0.005	6.35	± 0.127	0.125	± 0.005	3.18	± 0.127	0.062	1.57	470	32	1880	130	0.750	19	28	0.034	0.051
103-0312062	5/16	0.312	± 0.005	7.92	± 0.127	0.188	± 0.005	4.78	± 0.127	0.062	1.57	360	25	1440	99	1.375	35	28	0.045	0.067
103-0375062	3/8	0.375	± 0.005	9.52	± 0.127	0.250	± 0.005	6.35	± 0.127	0.062	1.57	290	20	1160	80	1.500	38	28	0.057	0.085
103-0438062	7/16	0.438	± 0.005	11.13	± 0.127	0.312	± 0.005	7.92	± 0.127	0.062	1.57	250	17	1000	69	2.625	67	28	0.068	0.101
103-0500062	1/2	0.500	± 0.005	12.70	± 0.127	0.375	± 0.005	9.53	± 0.127	0.062	1.57	210	14	840	58	2.125	54	28	0.079	0.118
103-0625062	5/8	0.625	± 0.006	15.88	± 0.152	0.500	± 0.006	12.70	± 0.152	0.062	1.57	160	11	640	44	3.000	76	28	0.102	0.152
103-0750062	3/4	0.750	± 0.006	19.05	± 0.152	0.625	± 0.006	15.88	± 0.152	0.062	1.57	130	9	520	36	6.000	152	28	0.125	0.186
103-1000062	1	1.000	± 0.010	25.40	± 0.254	0.875	± 0.010	22.22	± 0.254	0.062	1.57	90	6	360	25	8.000	203	28	0.170	0.253

## 203 Metric FEP Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	mm	mm	tol.	inch	tol.	mm	tol.	inch	tol.	mm	inch	bar 23°C	psi 73°F	bar 23°C	psi 73°F	mm	inch	at 73°F	kg. per m.	lb. per ft.
203-0300100	3	3	± 0.11	0.118	± 0.004	1	± 0.11	0.039	± 0.004	1	0.039	27	390	108	1560	6	0.250	28	0.014	0.009
203-0400100	4	4	± 0.11	0.157	± 0.004	2	± 0.11	0.079	± 0.004	1	0.039	20	290	80	1160	13	0.500	28	0.020	0.014
203-0500100	5	5	± 0.11	0.197	± 0.004	3	± 0.11	0.118	± 0.004	1	0.039	15	220	61	880	19	0.750	28	0.027	0.018
203-0600100	6	6	± 0.13	0.236	± 0.005	4	± 0.13	0.157	± 0.005	1	0.039	12	180	50	720	29	1.125	28	0.034	0.023
203-0700100	7	7	± 0.13	0.276	± 0.005	5	± 0.13	0.197	± 0.005	1	0.039	10	150	41	600	44	1.750	28	0.041	0.027
203-0800100	8	8	± 0.13	0.315	± 0.005	6	± 0.13	0.236	± 0.005	1	0.039	9	130	36	520	51	2.000	28	0.047	0.032
203-0900100	9	9	± 0.13	0.354	± 0.005	7	± 0.13	0.275	± 0.005	1	0.039	8	110	30	440	54	2.125	28	0.054	0.036
203-1000100	10	10	± 0.13	0.393	± 0.005	8	± 0.13	0.315	± 0.005	1	0.039	7	100	28	400	70	2.750	28	0.061	0.041
203-1200100	12	12	± 0.15	0.472	± 0.006	10	± 0.15	0.394	± 0.006	1	0.039	6	80	22	320	76	3.000	28	0.074	0.050

**WARNING**

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# FEP Heat Shrinkable Tubing

## Series 1.3:1 HS1.3FEP



### Features

- Easier to shrink than PTFE
- Chemically inert
- Low coefficient of friction
- Superior dielectric strength
- Good heat resistance
- Self extinguishing
- Non-wetting

### Certifications/Compliance

- AMS-DTL-23053/11A, Class 1
- ASTM D2902 Type II
- ASTM D3296-03
- VW1 and UL-83 (natural)
- FDA Compliant
- USP Class VI Compliant

### Applications/Markets



- Protective Cover
- UV Light Covering
- Product Testing
- Rollers

### Order Information

**Example: HS1.3FEP24-0CC48.000**

**HS1.3FEP24-0CC48.000 – Heat Shrink**

**HS1.3FEP24-0CC48.000 – Shrink Ratio (1.3:1)**

**HS1.3FEP24-0CC48.000 – FEP**

**HS1.3FEP24-0CC48.000 – Heat Shrink Size in AWG (AWG 24) (For inch size use inch (3/8"))**

**HS1.3FEP24-0CC48.000 – Black**

**HS1.3FEP24-0CC48.000 – Package Quantity in feet (48")**

### Colors

- ○ Natural, Translucent
- Colors available as custom run, see color code table

When ordering coiled tubing in colors, the color code is always followed by TC; when ordering cut lengths, the color code is followed by CC  
i.e., HS1.3FEP24-2TC  
i.e., HS1.3FEP24-0CC48.000

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			

### Notes

- Working Temperature: -100°F (-75°C) to +400°F (204°C)
- Shrink Temperature: 1" Dia. and below : 410°F (210°C) Over 1" Dia. : 430°F (221°C)
- \*Dielectric Strength:  $\geq 2,000$  V/M, per ASTM D 149 short term test of 10 MIL thickness (Volts/MIL)
- Heat Shrink tubing is available in stock packaging of 4-ft. straight lengths
- Custom packaging, sizes, lengths and colors are quoted upon request



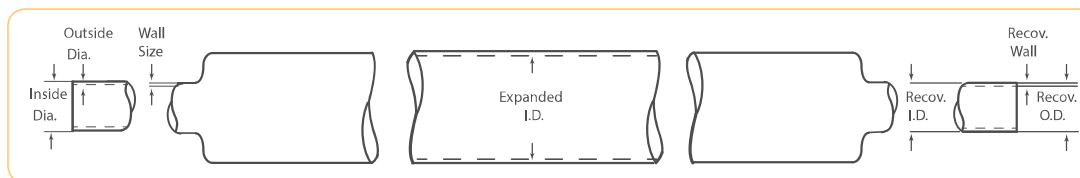
#### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



**HS1.3FEP AWG Heat Shrink Tubing (1.3:1)**

Part Number	Order Size AWG	Mil Spec*	Minimum Expanded I.D.		Maximum Recovered I.D.		Nominal Recovered Wall	
			inch	mm	inch	mm	inch	mm
HS1.3FEP24	24	23053/11A-101	0.031	0.79	0.027	0.69	0.008 ± 0.002	0.20 ± 0.05
HS1.3FEP22	22	23053/11A-102	0.036	0.91	0.032	0.81	0.008 ± 0.002	0.20 ± 0.05
HS1.3FEP20	20	23053/11A-103	0.045	1.14	0.039	0.99	0.008 ± 0.002	0.20 ± 0.05
HS1.3FEP18	18	23053/11A-104	0.060	1.52	0.049	1.25	0.008 ± 0.002	0.20 ± 0.05
HS1.3FEP16	16	23053/11A-105	0.075	1.90	0.061	1.55	0.009 ± 0.002	0.23 ± 0.05
HS1.3FEP14	14	23053/11A-106	0.092	2.34	0.072	1.83	0.009 ± 0.002	0.23 ± 0.05
HS1.3FEP12	12	23053/11A-107	0.115	2.92	0.089	2.26	0.009 ± 0.002	0.23 ± 0.05
HS1.3FEP10	10	23053/11A-108	0.141	3.58	0.114	2.90	0.010 ± 0.003	0.25 ± 0.08
HS1.3FEP09	9	23053/11A-109	0.158	4.01	0.124	3.15	0.010 ± 0.003	0.25 ± 0.08
HS1.3FEP08	8	23053/11A-110	0.180	4.57	0.143	3.63	0.010 ± 0.003	0.25 ± 0.08
HS1.3FEP07	7	23053/11A-111	0.197	5.00	0.158	4.01	0.011 ± 0.004	0.28 ± 0.10
HS1.3FEP06	6	23053/11A-112	0.225	5.72	0.180	4.57	0.011 ± 0.004	0.28 ± 0.10
HS1.3FEP05	5	23053/11A-113	0.248	6.30	0.198	5.03	0.011 ± 0.004	0.28 ± 0.10
HS1.3FEP04	4	23053/11A-114	0.290	7.37	0.226	5.74	0.011 ± 0.004	0.28 ± 0.10
HS1.3FEP03	3	23053/11A-115	0.310	7.87	0.249	6.32	0.011 ± 0.003	0.28 ± 0.08
HS1.3FEP02	2	23053/11A-116	0.365	9.27	0.280	7.11	0.012 ± 0.004	0.31 ± 0.10
HS1.3FEP01	1	23053/11A-117	0.400	10.2	0.311	7.90	0.012 ± 0.004	0.31 ± 0.10
HS1.3FEP00	0	23053/11A-118	0.440	11.2	0.349	8.86	0.012 ± 0.004	0.31 ± 0.10

**HS1.3FEP Fractional Heat Shrink Tubing (1.3:1)**

Part Number	Order Size inch	Mil Spec*	Minimum Expanded I.D.		Maximum Recovered I.D.		Nominal Recovered Wall	
			inch	mm	inch	mm	inch	mm
HS1.3FEP3/8	3/8	23053/11A-119	0.500	12.7	0.383	9.73	0.015 ± 0.004	0.38 ± 0.10
HS1.3FEP7/16	7/16	23053/11A-120	0.580	14.7	0.448	11.4	0.020 ± 0.004	0.51 ± 0.10
HS1.3FEP1/2	1/2	23053/11A-121	0.666	16.9	0.510	13.0	0.020 ± 0.004	0.51 ± 0.10
HS1.3FEP5/8	5/8	23053/11A-122	0.830	21.1	0.637	16.2	0.025 ± 0.004	0.64 ± 0.10
HS1.3FEP3/4	3/4	23053/11A-123	1.000	25.4	0.764	19.4	0.030 ± 0.004	0.76 ± 0.10
HS1.3FEP7/8	7/8	23053/11A-124	1.170	29.7	0.891	22.6	0.035 ± 0.004	0.89 ± 0.10
HS1.3FEP1.00	1	23053/11A-126	1.330	33.8	1.020	25.9	0.035 ± 0.004	0.89 ± 0.10
HS1.3FEP1.13	1-1/8	23053/11A-133	1.500	38.1	1.145	29.1	0.035 ± 0.004	0.89 ± 0.10
HS1.3FEP1.25	1-1/4	23053/11A-134	1.666	42.3	1.270	32.3	0.035 ± 0.004	0.89 ± 0.10
HS1.3FEP1.38	1-3/8	23053/11A-135	1.833	46.6	1.390	35.3	0.035 ± 0.004	0.89 ± 0.10
HS1.3FEP1.50	1-1/2	23053/11A-136	2.000	50.8	1.520	38.6	0.035 ± 0.004	0.89 ± 0.10

**WARNING**

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# FEP Heat Shrinkable Tubing

## Series 1.67:1 HS1.6FEP



### Features

- Easier to shrink than PTFE
- Chemically inert
- Low coefficient of friction
- Superior dielectric strength
- Good heat resistance
- Self extinguishing
- Non-wetting

### Certifications/Compliance

- AMS-DTL-23053/11A, Class 2
- ASTM 2902 Type II
- ASTM D3296-03
- VW1 and UL-83 (natural)
- FDA Compliant
- USP Class VI Compliant

### Applications/Markets



- Protective Cover
- UV Light Covering
- Product Testing
- Rollers

### Order Information

**Example: HS1.6FEP3/32-NC48.000**

**HS1.6FEP3/32-NC48.000 – Heat Shrink**

**HS1.6FEP3/32-NC48.000 – Shrink Ratio (1.67:1)**

**HS1.6FEP3/32-NC48.000 – FEP**

**HS1.6FEP3/32-NC48.000 – Heat Shrink Size in inches (3/32")**

**HS1.6FEP3/32-NC48.000 – Natural**

**HS1.6FEP3/32-NC48.000 – Cut Tubing**

**HS1.6FEP3/32-NC48.000 – Package Quantity in feet (48")**

### Colors

- ○ Natural, Translucent
- Colors available as custom run, see color code table

When ordering coiled tubing in colors, the color code is always followed by TC; when ordering cut lengths, the color code is followed by CC  
i.e., HS1.6FEP3/32-2TC  
i.e., HS1.6FEP3/32-0CC48.000

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			

### Notes

- Working Temperature: -100°F (-75°C) to +400°F (204°C)
- Shrink Temperature: 1" Dia. and below: 410°F (210°C) Over 1" Dia.: 430°F (221°C)
- \*Dielectric Strength:  $\geq 2,000$  V/M, per ASTM D 149 short term test of 10 MIL thickness (Volts/MIL)
- Heat Shrink tubing is available in stock packaging of 4-ft. straight lengths
- Custom packaging, sizes, lengths and colors are quoted upon request



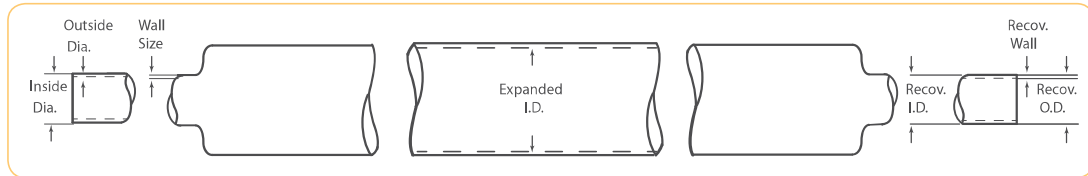
#### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



### HS1.6FEP Fractional Heat Shrink Tubing (1.67:1)

Part Number	Order Size inch	Mil Spec*	Minimum Expanded I.D.		Maximum Recovered I.D.		Nominal Recovered Wall	
			inch	mm	inch	mm	inch	mm
HS1.6FEP3/32	3/32	23053/11A-201	0.093	2.36	0.056	1.42	0.008 ± 0.003	0.20 ± 0.08
HS1.6FEP1/8	1/8	23053/11A-202	0.125	3.18	0.075	1.90	0.010 ± 0.003	0.25 ± 0.08
HS1.6FEP3/16	3/16	23053/11A-203	0.188	4.78	0.115	2.92	0.010 ± 0.003	0.25 ± 0.08
HS1.6FEP1/4	1/4	23053/11A-204	0.250	6.35	0.150	3.81	0.010 ± 0.003	0.25 ± 0.08
HS1.6FEP3/8	3/8	23053/11A-205	0.375	9.52	0.225	5.72	0.012 ± 0.003	0.31 ± 0.08
HS1.6FEP1/2	1/2	23053/11A-206	0.500	12.7	0.300	7.62	0.015 ± 0.004	0.38 ± 0.10
HS1.6FEP3/4	3/4	23053/11A-207	0.750	19.1	0.450	11.4	0.020 ± 0.004	0.51 ± 0.10
HS1.6FEP1.00	1	23053/11A-208	1.000	25.4	0.600	15.2	0.025 ± 0.005	0.64 ± 0.13
HS1.6FEP1.50	1-1/2	23053/11A-209	1.500	38.1	0.900	22.9	0.030 ± 0.005	0.76 ± 0.13
HS1.6FEP2.00	2	23053/11A-210	2.000	50.8	1.200	30.5	0.030 ± 0.005	0.76 ± 0.13



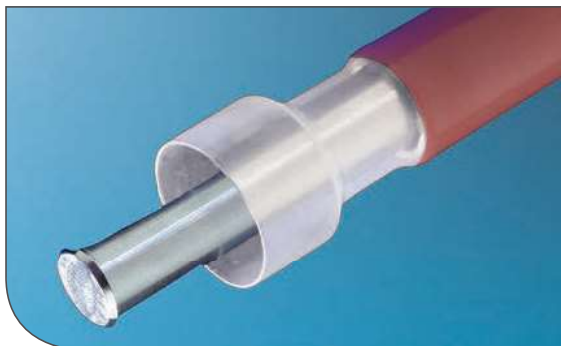
#### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# FEP Heat Shrinkable Roll Cover

Series 1.25:1 HS1.25FEP



## Features

- Extends roller life
- Eliminates roller build up and picking
- Low coefficient of friction
- Flexible
- Good heat resistance

## Certifications/Compliance

- ASTM D2902 Type II
- VW1 and UL-83 (natural)

## Applications/Markets



- Protective Cover
- Rollers

## Order Information

**Example: HS1.25FEP3.50-NC48.000**

**HS1.25FEP3.50-NC48.000 – Heat Shrink**

**HS1.25FEP3.50-NC48.000 – Shrink Ratio (1.25:1)**

**HS1.25FEP3.50-NC48.000 – FEP**

**HS1.25FEP3.50-NC48.000 – Heat Shrink Expanded**

**Size inches (3 1/2 in)**

**HS1.25FEP3.50-NC48.000 – Natural**

**HS1.25FEP3.50-NC48.000 – Cut Tubing**

**HS1.25FEP3.50-NC48.000 – Package Quantity in feet (48")**

## Colors

- ○ Natural, Translucent

## Notes

- Working Temperature: -100°F (-75°C) to +400°F (204°C)
- Shrink Temperature: 347°F (175°C) for 10 minutes - For high temperatures 500°F (260°C), PFA roll covers are available
- Dielectric Strength:  $\geq 2,000$  V/M, per ASTM D 149 short term test of 10 MIL thickness (Volts/MIL)
- Roll Cover is available in stock packaging of 4-ft. straight lengths
- Custom packaging, sizes, lengths and colors are quoted upon request
- For adhesion purposes, roll covers must be etched; Etching is available on the inside diameter, outside diameter or both



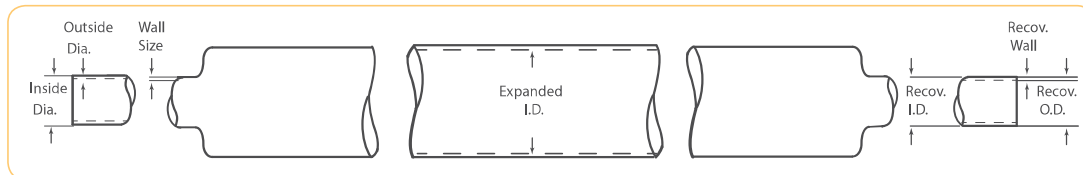
### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



### HS1.25.1 FEP Roll Cover

Part Number	Order Size	Minimum Expanded I.D.		Maximum Recovered I.D.		Nominal Recovered Wall	
		inch	mm	inch	mm	inch	mm
HS1.25FEP1.00	1	1.100	27,9	0.880	22,4	0.020 ± 0.004	0.508 ±0.10
HS1.25FEP1.25	1 1/4	1.300	33,0	1.000	25,4	0.020 ± 0.004	0.508 ±0.10
HS1.25FEP1.50	1-1/2	1.700	43,2	1.300	33,0	0.020 ± 0.004	0.508 ±0.10
HS1.25FEP2.00	2	2.100	53,3	1.700	43,2	0.020 ± 0.004	0.508 ±0.10
HS1.25FEP2.25	2-1/4	2.260	59,7	2.000	50,8	0.020 ± 0.004	0.508 ±0.10
HS1.25FEP2.50	2-1/2	2.600	66,0	2.100	53,3	0.020 ± 0.004	0.508 ±0.10
HS1.25FEP3.00	3	3.100	78,7	2.600	66,0	0.020 ± 0.004	0.508 ±0.10
HS1.25FEP3.50	3-1/2	3.500	88,9	3.100	78,7	0.020 ± 0.004	0.508 ±0.10
HS1.25FEP4.00	4	4.300	109,2	3.500	88,9	0.020 ± 0.004	0.508 ±0.10
HS1.25FEP5.00	5	5.200	132,1	4.300	109,3	0.020 ± 0.004	0.508 ±0.10



#### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# FEP Convoluted Tubing

Series: CV03 and AMS-T-81914/3 and AMS-T-81914/4



## Features

- Cuffs are sized on the I.D.
- Very flexible
- Long continuous lengths
- Translucent
- Chemically inert
- Good flexlife

## Certifications/Compliance

### AMS-T-81914

- ASTM D3296-03
- VW1 and UL-83 (natural)

### SAE AS81914

- AMS-T-81914/3
- AMS-T-81914/4
- ASTM D3296-03
- FDA Compliant
- USP Class VI Compliant
- VW1 and UL-83 (natural)

## Applications/Markets



- Fluid Transport
- Wire Harness
- Protection/Cable Core
- Laboratory
- Robotics

## Order Information

**Example: CV03-1-1/2-NT**

**CV03-1-1/2-NT – Convoluted Tubing**

CV03-1-1/2-NT – **FEP**

CV03-**1-1/2**-NT – **Tube Size** in inches (1-1/2")

CV03-1-1/2-**NT** – **Natural**

## Order Information

**Example: 81914/3-1001-NT**

**81914/3-1001-NT – AMS-T-81914 Convoluted**

81914/**3**-1001-NT – **FEP**

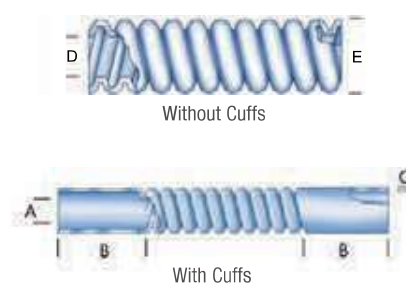
81914/3-**1001**-NT – **Helical Convolutions**

81914/3-10**01**-NT – **Size** (01=0.187")

81914/3-1001-**NT** – **Color** (N=Natural)

81914/3-1001-NT – “**T**” is **bulk** (for cut tubing remove “T”, add length, ie. 81914/3-1001-N1200 = 187" Convo, natural, cut 12" long)

Standard Cuffs for **FEP Convo** are sized on the **I.D.**



With Cuffs

### Color Code

○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			



### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## FEP Convoluted CV03

(Standard tubing is natural)

Part Number	Order Size	Standard Cuff I.D. "A"		Standard Cuff Length "B"		Wall Thickness "C"		Min. Inside Diameter "D"		Max. Inside Diameter "D"		Max. Outside Diameter "E"		**Min. Bend Radius	
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
CV03-1/4-NT	1/4	1/4	6.35	3/4	19.1	0.020	0.508	0.251	6.38	0.265	6.73	0.405	10.3	0.365	9
CV03-5/16-NT	5/16	5/16	7.94	1	25.4	0.023	0.584	0.273	6.93	0.281	7.14	0.424	10.8	0.500	13
CV03-3/8-NT	3/8	3/8	9.53	1	25.4	0.023	0.584	0.364	9.25	0.375	9.53	0.530	13.5	0.875	22
CV03-1/2-NT	1/2	1/2	12.7	1	25.4	0.025	0.635	0.485	12.3	0.500	12.7	0.660	16.8	0.625	16
CV03-5/8-NT	5/8	5/8	15.9	1-1/4	31.8	0.025	0.635	0.609	15.5	0.625	15.9	0.780	19.8	1.500	38
CV03-3/4-NT	3/4	3/4	19.1	1-1/2	38.1	0.025	0.635	0.730	18.5	0.750	19.1	0.975	24.8	3.500	89
CV03-1.00-NT	1	1	25.4	2	50.8	0.030	0.762	0.975	24.8	1.000	25.4	1.260	32.0	2.250	57

\*\* Minimum 36" length.

## Notes

- Working Temperature: -100°F (-75°C) to +400°F (204°C)

## Colors

- Natural, Translucent

## FEP Convoluted Tubing (AMS-T-81914/3)

(Standard tubing is natural)

Part Number	MIL Spec	Maximum Inside Diameter		Minimum Inside Diameter		Maximum Outside Diameter		Maximum Wall Thickness		Minimum Bend Radius		Pitch	Weight	
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		lb./100 ft.	kg./100 mtr.
81914/3-1001-NT	-01	0.187	4.75	0.181	4.60	0.320	8.13	0.018	0.457	1/2	13	8	1.5	2.23
81914/3-1002-NT	-02	0.281	7.14	0.273	6.93	0.414	10.5	0.018	0.457	3/4	19	8	1.7	2.53
81914/3-1003-NT	-03	0.312	7.93	0.306	7.77	0.450	11.4	0.018	0.457	3/4	19	8	1.9	2.83
81914/3-1004-NT	-04	0.375	9.53	0.364	9.25	0.510	13.0	0.018	0.457	7/8	22	8	2.2	3.27
81914/3-1005-NT	-05	0.437	11.1	0.427	10.9	0.571	14.5	0.018	0.457	7/8	22	8	3.1	4.61
81914/3-1006-NT	-06	0.500	12.7	0.485	12.3	0.650	16.5	0.023	0.584	1-1/4	32	7	4.0	5.95
81914/3-1007-NT	-07	0.625	15.9	0.608	15.4	0.770	19.6	0.023	0.584	1-1/2	38	7	4.8	7.14
81914/3-1008-NT	-08	0.750	19.1	0.730	18.5	0.930	23.6	0.023	0.584	1-3/4	44	6	6.1	9.07
81914/3-1009-NT	-09	0.875	22.2	0.860	21.8	1.073	27.3	0.023	0.584	2	51	5	7.0	10.4
81914/3-1010-NT	-10	1.000	25.4	0.975	24.8	1.226	31.1	0.023	0.584	2.370	60	5	8.5	12.7
81914/3-1011-NT	-11	1.125	28.6	1.105	28.1	1.390	35.3	0.023	0.584	2.370	60	5	9.3	13.8
81914/3-1012-NT	-12	1.250	31.8	1.210	30.7	1.539	39.1	0.023	0.584	2-3/4	70	4	10.9	16.2

FEP convoluted tubing is provided in NATURAL without cuffs direct from the factory. Natural part numbers are designated with "NT" after the Mil Spec number (i.e. 81914/3-1014-NT).

## Notes

- Working Temperature: 392°F (200°C)
- Tubing is provided in natural without cuffs direct from inventory
- Also available in close convolution 81914/4
- Custom packaging, sizes, lengths, cuffs and colors are quoted upon request

## Colors

- Natural, Translucent
- Colors available as custom run, see color code table

When ordering convoluted tubing in colors, the "N" designation for natural should be replaced by the correct color designator;

i.e., 81914/3-1001-0T (black bulk tubing)

i.e., 81914/3-1001-01200 (black tubing - 12 inches long)



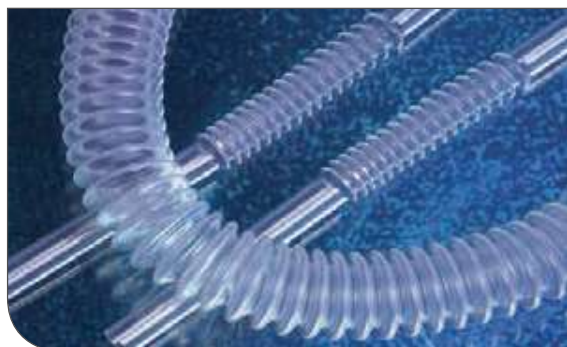
### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# FEP/PFA Corrugated

## Extra Flexible Fluoropolymer Tubing, Series CR03



### Features

- Capable of turning sharp corners without reducing the inside diameter of the tube
- Extremely flexible
- Kink resistant
- Non stick surface allows for easy cleaning
- Excellent clarity
- Chemically inert
- Available in FEP, PFA and High Purity PFA

### Applications/Markets



- Vacuum Applications
- Robotics
- Instrumentation
- DNA Sequencer
- Fluid Transfer
- Pharmaceutical
- Wet Bench

### Certifications/Compliance

- FEP - ASTM D3296-03
- PFA - ASTM D3307-10
- FDA Compliant
- USP Class VI Compliant
- VW1 and UL-83 (natural)

### Order Information

**Example: CR03-3/4-NT**

**CR03-3/4-NT – Corrugated Tubing**

**CR03-3/4-NT – FEP**

**CR03-3/4-NT – Tube I.D. when cuffed in inches (3/4")**

**CR03-3/4-NT – Color (N=Natural)**

**CR03-3/4-NT – "T" is bulk - for cuffed tubing add length, ie, CR03-3/4-N1200 = 1" Corr, natural, cut 12" long**

### Colors

- ○ Natural, Translucent

### Notes

- Working Temperature: -100°F (-75°C) to +200°F (93°C) @ 0 pressure -  
For higher temperatures, request PFA Corrugated -100°F (-75°C) to +300°F (148°C) @ 0 pressure
- Vacuum Service: 29.9 IN. Hg (759M Hg)
- Extension-Compression Length Ratio: Approximately 2:1
- Tubing is provided in natural in custom lengths with a maximum length of 12 feet/3 meters
- Corrugated tubing is also available in specialty configurations where corrugated and straight tubing run intermittently along the tube
- Custom packaging, sizes, lengths and colors are quoted upon request



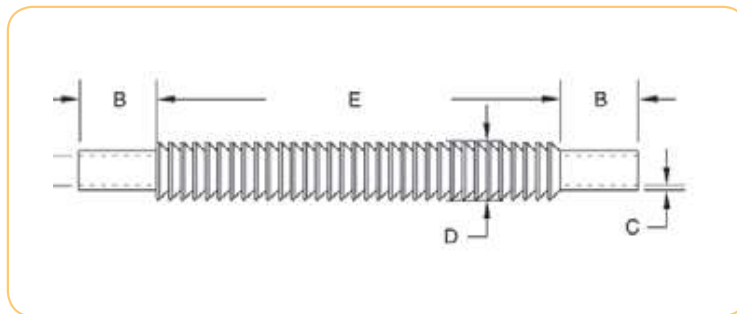
#### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



**FEP Tex-Flex® Corrugated**

Part Number	Size To Order	Maximum Cuff I.D. "A"		Standard Cuff Length "B"		Wall Thickness "C"		Ref. Outside Diameter "D"		Corrugated Length "E"	Minimum Bend Radius	
		inch	mm	inch	mm	inch	mm	inch	mm	±1	inch	mm
CR03-1/4-NT	1/4	0.250	6.35	3/4	19.1	0.015	0.38	0.375	9.53	To be specified at time of order	0.125	3.18
CR03-3/8-NT	3/8	0.375	9.53	1	25.4	0.020	0.51	0.625	15.9		0.187	4.76
CR03-1/2-NT	1/2	0.500	12.7	1	25.4	0.025	0.64	0.750	19.0		0.250	6.35
CR03-5/8-NT	5/8	0.625	15.9	1	25.4	0.025	0.64	0.938	23.8		0.312	7.94
CR03-3/4-NT	3/4	0.750	19.1	1-1/2	38.1	0.030	0.76	1.063	26.9		0.375	9.53
CR03-7/8-NT	7/8	0.875	22.2	1-1/2	38.1	0.030	0.76	1.250	31.8		0.438	11.1
CR03-1.00-NT	1	1.000	24.8	2	50.8	0.035	0.89	1.438	36.5		0.500	12.7
CR03-1.25-NT	1-1/4	1.250	31.8	2	50.8	0.035	0.89	1.625	41.3		0.625	15.9
CR03-1.50-NT	1-1/2	1.500	38.1	2	50.8	0.035	0.89	1.813	46.1		0.750	19.1
CR03-2.00-NT	2	2.000	50.8	2	50.8	0.040	1.02	2.625	66.7		1.000	25.4
CR03-2.50-NT	2-1/2	2.500	63.5	2-1/2	63.5	0.070	1.78	3.360	85.3		2.500	63.5

**WARNING**

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# Retractable Coiled Tubing

## Single or Dual Containment, Series 703, 704, 705



### Features

- Extremely flexible
- Excellent clarity
- Chemically inert
- Low coefficient of friction
- Self extinguishing
- Non-wetting
- Available in FEP, PFA and High Purity PFA

### Certifications/Compliance

- FEP - ASTM D3296-03
- PFA - ASTM D3307-10
- FDA Compliant
- USP Class VI Compliant
- VW1 and UL-83 (natural)

### Applications/Markets



- Fluid Handling
- Wet Bench
- Lab Equipment
- Gas Dispensing
- Medical

### Order Information

**Example: 704-0312062-xx0012**

**704-0312062-xx0012 – Retractable tubing**

**704-0312062-xx0012 – PFA**

**704-0312062-xx0012 – Tube O.D. in inches (3/16")**

**704-0312062-xx0012 – Wall (0.062")**

**704-0312062-xx0012 – Custom Options (when needed)**

**704-0312062-xx0012 – Length 12"**

### Fittings

Fittings available for sizes 3/16" up to 1/2"

Parker Fittings available from:  
Fluid System Connectors Division  
Otsego, MI

(269) 692-6555

(269) 692-6634 FAX

FSC Product Families:

- Compression
- Compress-Align®
- TrueSeal™

### Colors

- ○ Natural, Translucent

### Notes

- Working Temperature: -100°F (-75°C) to +200°F (93°C) @ 0 pressure. For higher temperatures, request PFA -100°F (-75°C) to +300°F (148°C) @ 0 pressure; above these temperatures, the coils dimensions are not stable and the coils will lose their shape
- Wall thickness of tubing .062"/1.57mm
- "X" denotes resin type - Replace "X" with 3 for FEP, 4 for PFA and 5 for HP PFA
- "xx" denotes custom options - Use when needed
- Standard left/right tail length is 6 inches
- Custom packaging, sizes, lengths and colors are quoted upon request



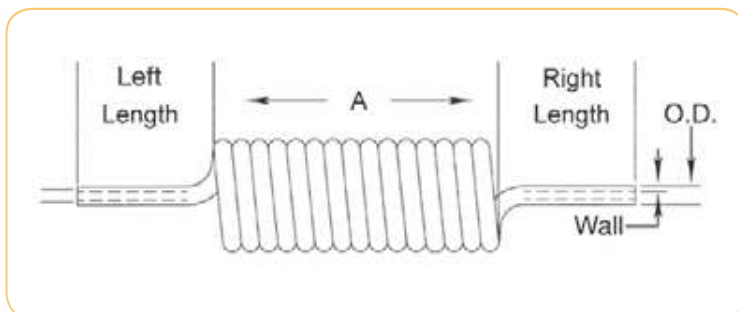
#### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## Retractable Tubing

Part Number	Size To Order O.D. x I.D.	Coil Inside Diameter		Retracted Length "A"		Extended Length	
		inch	mm	inch	mm	inch	mm
70X-0188062-xx0003	3/16" x 1/16"	0.750	19.1	3	76	12	305
70X-0188062-xx0006	3/16" x 1/16"	0.750	19.1	6	152	24	610
70X-0188062-xx0012	3/16" x 1/16"	0.750	19.1	12	305	48	1219
70X-0188062-xx0018	3/16" x 1/16"	0.750	19.1	18	457	72	1829
70X-0250062-xx0003	1/4" x 1/8"	1	25.4	3	76	12	305
70X-0250062-xx0006	1/4" x 1/8"	1	25.4	6	152	24	610
70X-0250062-xx0012	1/4" x 1/8"	1	25.4	12	305	48	1219
70X-0250062-xx0018	1/4" x 1/8"	1	25.4	18	457	72	1829
70X-0312062-xx0003	5/16" x 3/16"	1.625	41.3	3	76	12	305
70X-0312062-xx0006	5/16" x 3/16"	1.625	41.3	6	152	24	610
70X-0312062-xx0012	5/16" x 3/16"	1.625	41.3	12	305	48	1219
70X-0312062-xx0018	5/16" x 3/16"	1.625	41.3	18	457	72	1829
70X-0375062-xx0003	3/8" x 1/4"	1.625	41.3	3	76	12	305
70X-0375062-xx0006	3/8" x 1/4"	1.625	41.3	6	152	24	610
70X-0375062-xx0012	3/8" x 1/4"	1.625	41.3	12	305	48	1219
70X-0375062-xx0018	3/8" x 1/4"	1.625	41.3	18	457	72	1829
70X-0438062-xx0003	7/16" x 5/16"	3	76.2	3	76	12	305
70X-0438062-xx0006	7/16" x 5/16"	3	76.2	6	152	24	610
70X-0438062-xx0012	7/16" x 5/16"	3	76.2	12	305	48	1219
70X-0500062-xx0003	1/2" x 3/8"	3	76.2	3	76	12	305
70X-0500062-xx0006	1/2" x 3/8"	3	76.2	6	152	24	610
70X-0500062-xx0012	1/2" x 3/8"	3	76.2	12	305	48	1219



### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# PFA Tubing

Series Fractional & Metric: 104, 204



## Features

- Virgin Perfluoroalkoxy
- Translucent
- High purity resins available
- Low permeability
- Exceptional heat resistance
- Chemically inert
- Long continuous lengths
- Low coefficient of friction
- Self extinguishing
- Non-wetting
- Non leaching

## Certifications/Compliance

- ASTM D3307-10
- VW1 and UL-83 (natural)
- FDA Compliant
- USP Class VI Compliant

## Applications/Markets



- Air Sampling
- Gas Sampling
- Fluid Transfer
- Laboratory
- Wet Bench
- Flow Monitoring
- Steam Plant

## Order Information

**Example: 104-0188062-NT-100**

104-0188062-NT-100 – **Fractional**

104-0188062-NT-100 – **PFA**

104-**0188**062-NT-100 – **Tube O.D.** in inches (**3/16"**)

104-0188**062**-NT-100 – **Tube Wall Thickness** in inches (**.062"**)

104-0188062-**NT**-100 – **Natural**

104-0188062-NT-**100** – **Package Quantity** in feet (**100'**)

## Fittings

Fittings available for sizes 3/32" up to 1"

Parker Fittings available from:

Fluid System Connectors Division

Otsego, MI (269) 692-6555 (269) 692-6634 FAX

FSC Product Families:

- Compression
- Compress-Align®
- Metric Compression
- TrueSeal™

## Notes

- Working Temperature: -100°F (-75°C) to +500°F (260°C)
- Working pressure calculated using a Design Factor of 4 at 73°F (23°C)
- Custom packaging and sizes are quoted upon request

## Options

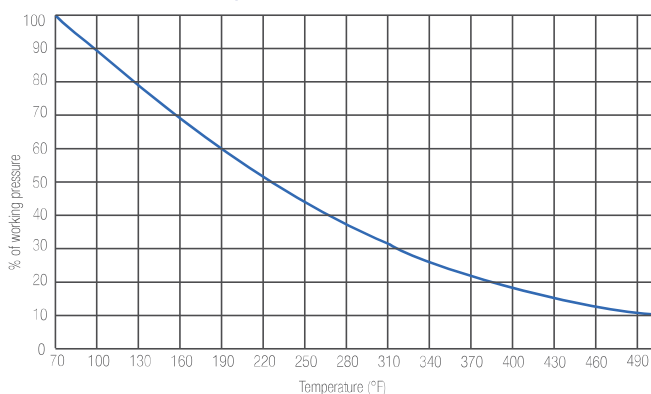
- Smoothbore
- Convuluted
- Corrugated
- Retractable Coils
- Heat Shrink

## Colors

- ○ Natural, Translucent
- Colors available as custom run, see color code table

Color Code					
○	N	Natural	●	5	Green
●	0	Black	●	6	Blue
●	1	Brown	●	7	Violet
●	2	Red	●	8	Gray
●	3	Orange	○	9	White
●	4	Yellow			

## PFA Tubing (Series 104, 204) Maximum Working Pressure (bar)



### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## 104 PFA Industrial Wall Fractional Size Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	inch	inch	tol.	mm	tol.	inch	tol.	mm	tol.	inch	mm	psi 73°F	bar 23°C	psi 73°F	bar 23°C	inch	mm	at 73°F	lb. per ft.	kg. per m.
104-0094031	3/32	0.094	± 0.004	2.40	± 0.102	0.031	± 0.002	0.79	± 0.051	0.031	0.79	680	47	2720	188	0.250	6	28	0.006	0.009
104-0125031	1/8	0.125	± 0.004	3.18	± 0.102	0.064	± 0.004	1.63	± 0.102	0.031	0.79	500	34	2000	138	0.375	10	28	0.009	0.013
104-0156031	5/32	0.157	± 0.005	3.99	± 0.127	0.094	± 0.003	2.39	± 0.076	0.031	0.79	390	27	1560	108	0.625	16	28	0.011	0.016
104-0188031	3/16	0.188	± 0.005	4.78	± 0.127	0.125	± 0.005	3.18	± 0.127	0.031	0.79	320	22	1280	88	0.625	16	28	0.014	0.021
104-0250031	1/4	0.250	± 0.005	6.35	± 0.127	0.188	± 0.005	4.78	± 0.127	0.031	0.79	230	16	920	63	0.875	22	28	0.020	0.030
104-0312031	5/16	0.312	± 0.005	7.92	± 0.127	0.250	± 0.005	6.35	± 0.127	0.031	0.79	180	12	720	50	1.750	44	28	0.025	0.037
104-0375031	3/8	0.375	± 0.005	9.52	± 0.127	0.312	± 0.005	7.92	± 0.127	0.031	0.79	140	10	560	39	3.250	83	28	0.031	0.046
104-0438031	7/16	0.438	± 0.005	11.13	± 0.127	0.375	± 0.005	9.53	± 0.127	0.031	0.79	120	8	480	33	3.250	83	28	0.037	0.055
104-0500031	1/2	0.500	± 0.005	12.70	± 0.127	0.438	± 0.005	11.13	± 0.127	0.031	0.79	100	7	400	28	4.750	121	28	0.043	0.064
104-0563031	9/16	0.563	± 0.006	14.30	± 0.152	0.500	± 0.006	12.70	± 0.152	0.031	0.79	80	6	320	22	5.000	127	28	0.048	0.071

## 104 PFA Heavy Wall Fractional Size Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	inch	inch	tol.	mm	tol.	inch	tol.	mm	tol.	inch	mm	psi 73°F	bar 23°C	psi 73°F	bar 23°C	inch	mm	at 73°F	lb. per ft.	kg. per m.
104-0188062	3/16	0.188	± 0.005	4.78	± 0.127	0.062	± 0.005	1.57	± 0.127	0.062	1.57	680	47	2720	188	0.500	13	28	0.023	0.034
104-0250040	1/4	0.250	± 0.005	6.35	± 0.127	0.170	± 0.005	4.32	± 0.127	0.040	1.02	300	21	1200	83	0.875	22	28	0.025	0.037
104-0250047	1/4	0.250	± 0.005	6.35	± 0.127	0.156	± 0.005	3.96	± 0.127	0.047	1.19	370	26	1480	102	1.000	25	28	0.028	0.042
104-0250062	1/4	0.250	± 0.005	6.35	± 0.127	0.125	± 0.005	3.18	± 0.127	0.062	1.57	500	34	2000	138	0.500	13	28	0.034	0.051
104-0312062	5/16	0.312	± 0.005	7.92	± 0.127	0.188	± 0.005	4.78	± 0.127	0.062	1.57	390	27	1560	108	0.750	19	28	0.045	0.067
104-0375062	3/8	0.375	± 0.005	9.52	± 0.127	0.250	± 0.005	6.35	± 0.127	0.062	1.57	320	22	1280	88	1.250	32	28	0.057	0.085
104-0438062	7/16	0.438	± 0.005	11.13	± 0.127	0.312	± 0.005	7.92	± 0.127	0.062	1.57	270	19	1080	74	2.625	67	28	0.068	0.101
104-0500062	1/2	0.500	± 0.005	12.70	± 0.127	0.375	± 0.005	9.53	± 0.127	0.062	1.57	230	16	920	63	3.000	76	28	0.079	0.118
104-0750062	3/4	0.750	± 0.006	19.05	± 0.152	0.625	± 0.006	15.88	± 0.152	0.062	1.57	140	10	560	39	6.000	152	28	0.125	0.186
104-1000062	1	1.000	± 0.010	25.40	± 0.254	0.875	± 0.010	22.22	± 0.254	0.062	1.57	100	7	400	28	8.000	203	28	0.170	0.253

## 204 Metric PFA Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	mm	mm	tol.	inch	tol.	mm	tol.	inch	tol.	mm	inch	bar 23°C	psi 73°F	bar 23°C	psi 73°F	mm	inch	at 73°F	kg. per m.	lb. per ft.
204-0400100	4	4	± 0.11	.157	± 0.004	2	± 0.11	.079	± 0.250	1	0.039	34	500	138	2000	6	0.250	28	0.020	0.014
204-0600100	6	6	± 0.11	.236	± 0.004	4	± 0.11	.157	± 0.004	1	0.039	22	320	88	1280	25	1.000	28	0.034	0.023
204-0800100	8	8	± 0.11	.315	± 0.004	6	± 0.11	.236	± 0.004	1	0.039	16	230	63	920	51	2.000	28	0.047	0.032
204-1000100	10	10	± 0.11	.393	± 0.004	8	± 0.11	.315	± 0.004	1	0.039	12	180	50	720	70	2.750	28	0.061	0.041
204-1200100	12	12	± 0.15	.472	± 0.006	10	± 0.15	.393	± 0.006	1	0.039	10	140	39	560	89	3.500	28	0.074	0.050



### WARNING

This product can expose you to chemicals including Tetrafluoroethylene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# High Purity PFA Tubing

## Series Fractional & Metric: 105, 205



### Features

- Withstands corrosive surfactants for longer periods of time
- Highest molecular weight available
- Lowest level of extractables
- Low permeability
- Exceptional heat resistance
- Chemically inert
- Long continuous lengths
- Low coefficient of friction
- Self extinguishing
- Non leaching

### Certifications/Compliance

- ASTM D3307-10
- VW1 and UL-83 (natural)
- FDA Compliant
- USP Class VI Compliant

### Applications/Markets



- Flow Monitoring
- Gas Transfer
- Food
- Wet Bench
- DI Water Dispensers
- DI Recirculators
- Heat Exchangers
- Pure Chemical Dispensers
- High Purity Applications

### Order Information

**Example: 105-0375031-NT-100**

105-0375031-NT-100 – **Fractional**

105-0375031-NT-100 – **High Purity PFA**

105-**0375**031-NT-100 – **Tube O.D.** in millimeters (**3/8"**)

105-0375**031**-NT-100 – **Tube Wall Thickness** in millimeters (**.031"**)

105-0375031-**NT**-100 – **Natural**

105-0375031-NT-**100** – **Package Quantity** in feet (**100'**)

### Notes

- Working Temperature: -100°F (-75°C) to +500°F (260°C)
- Working pressure calculated using a Design Factor of 4 at 73°F (23°C)
- Custom packaging and sizes are quoted upon request

### Options

- Smoothbore
- Convuluted
- Corrugated
- Retractable Coils

### Colors

- Natural, Translucent

### Fittings

Fittings available for sizes 4mm up to 12mm

Parker Fittings available from:  
Fluid System Connectors Division  
Otsego, MI

(269) 692-6555

(269) 692-6634 FAX

FSC Product Families:

- Compression
- Compress-Align™
- Metric Compression
- TrueSeal



#### WARNING

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## 105 High Purity PFA Industrial Wall Fractional Size Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	inch	inch	tol.	mm	tol.	inch	tol.	mm	tol.	inch	mm	psi 73°F	bar 23°C	psi 73°F	bar 23°C	inch	mm	at 73°F	lb. per ft.	kg. per m.
105-0125031	1/8	0.125	± 0.004	3.18	± 0.102	0.064	± 0.004	1.63	± 0.102	0.031	0.79	500	34	2000	138	0.500	13	28	0.009	0.013
105-0188031	3/16	0.188	± 0.005	4.78	± 0.127	0.125	± 0.005	3.18	± 0.127	0.031	0.79	320	22	1280	88	0.750	19	28	0.014	0.021
105-0250031	1/4	0.250	± 0.005	6.35	± 0.127	0.188	± 0.005	4.78	± 0.127	0.031	0.79	230	16	920	63	1.000	25	28	0.020	0.030
105-0375031	3/8	0.375	± 0.005	9.52	± 0.127	0.312	± 0.005	7.92	± 0.127	0.031	0.79	140	10	560	39	3.500	89	28	0.031	0.047

## 105 High Purity PFA Heavy Wall Fractional Size Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	inch	inch	tol.	mm	tol.	inch	tol.	mm	tol.	inch	mm	psi 73°F	bar 23°C	psi 73°F	bar 23°C	inch	mm	at 73°F	lb. per ft.	kg. per m.
105-0250040	1/4	0.250	± 0.005	6.35	± 0.127	0.170	± 0.005	4.32	± 0.127	0.040	1.02	300	21	1200	83	0.938	24	28	0.025	0.037
105-0250047	1/4	0.250	± 0.005	6.35	± 0.127	0.156	± 0.005	3.96	± 0.127	0.047	1.19	370	26	1480	102	0.500	13	28	0.028	0.042
105-0250062	1/4	0.250	± 0.005	6.35	± 0.127	0.125	± 0.005	3.18	± 0.127	0.062	1.57	500	34	2000	138	0.625	16	28	0.034	0.051
105-0375062	3/8	0.375	± 0.005	9.52	± 0.127	0.250	± 0.005	6.35	± 0.127	0.062	1.57	320	22	1280	88	1.125	29	28	0.057	0.085
105-0500062	1/2	0.500	± 0.005	12.70	± 0.127	0.375	± 0.005	9.53	± 0.127	0.062	1.57	230	16	920	63	2.250	57	28	0.079	0.119
105-0750062	3/4	0.750	± 0.006	19.05	± 0.152	0.625	± 0.006	15.88	± 0.152	0.062	1.57	140	10	560	39	4.250	108	28	0.125	0.186
105-1000062	1	1.000	± 0.010	25.40	± 0.254	0.875	± 0.010	22.22	± 0.254	0.062	1.57	100	7	400	28	8.000	203	*	0.170	0.254

## 205 Metric High PFA Tubing

Part Number	Order Size	Nominal O.D.				Nominal I.D.				Reference Wall		Working Pressure		Burst Pressure		Min. Bend Radius		Vac. Rating	Weight	
#																				
	mm	mm	tol.	inch	tol.	mm	tol.	inch	tol.	mm	inch	bar 23°C	psi 73°F	bar 23°C	psi 73°F	mm	inch	at 73°F	kg. per m.	lb. per ft.
205-0300100	3	3	± 0.11	0.118	± 0.004	1	± 0.11	0.039	± 0.004	1	0.039	47	680	188	2720	13	0.500	28	0.014	0.009
205-0400100	4	4	± 0.11	0.157	± 0.004	2	± 0.11	0.079	± 0.004	1	0.039	34	500	138	2000	13	0.500	28	0.020	0.020
205-0600100	6	6	± 0.11	0.236	± 0.004	4	± 0.11	0.157	± 0.004	1	0.039	22	320	88	1280	22	0.875	28	0.034	0.023
205-0800100	8	8	± 0.11	0.315	± 0.004	6	± 0.11	0.236	± 0.004	1	0.039	16	230	63	920	35	1.375	28	0.047	0.032
205-1000100	10	10	± 0.11	0.393	± 0.004	8	± 0.11	0.315	± 0.004	1	0.039	12	180	50	720	51	2.000	28	0.061	0.041
205-1200100	12	12	± 0.15	0.472	± 0.006	10	± 0.15	0.394	± 0.006	1	0.039	10	140	39	560	89	3.500	28	0.074	0.050

**WARNING**

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