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## Why **Masterflex**® and **ISMATEC**® Pump Tubing?

# Accept No Substitutes—Use Only Masterflex and Ismatec Tubing in Your Pumps!

- Precision extruded to meet extremely tight tolerances
- Factory tested and optically inspected
- Formulated and validated to comply with regulatory standards and classifications including USP, EP, EU Food, FDA, NSF, and 3A
- 24 formulations to meet every application

To ensure accurate flow rates and long tubing life, use only Masterflex tubing in your pump tubing applications. Our tubing is your best choice because, unlike general-purpose commodity tubing, it is specifically designed and manufactured for use in demanding peristaltic pump applications.

# Pump Tubing for a Wide Range of Applications and Markets

- Pharmaceutical
- Medical research
- Industrial

- Biotech
- Education
- Laboratory

- Chemical processing
- Water treatment
- Printing

- Food & beverage
- Environmental
- Semiconductors

# Your Complete Masterflex Fluid Handling System

Masterflex pump systems consist of three components: pump head, tubing, and drive. You can match individual components to your specific application or select one of our convenient pump systems that can be ordered with a single catalog number:



# Pump Selection Help is Available Online

Use our convenient online resources (described at right) to help you select the perfect Masterflex tubing pump system for your applications!

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Fiedler Scientific Instruments, s.r.o.

H. Malifové 1 638 00 Brno Cacch Republic Complete documentation to prove that your specific Masterilex pump tubing complete from the c

2Email: info@lab-eu.com info@pristroje.cz

#### **Helpful Online Tools and Information**

# Masterflex.com—There When You Need It

In addition to full product specifications, images, ordering information, and real-time stock availability, **Masterflex.com** offers you the following features 24 hours a day:

#### **Single-Use Applications**

- Interactive biopharmaceutical workflows
- informative articles
- Comprehensive range of Masterflex Single-Use products such as sampling bottles, flow sensors, and quick-disconnect fittings

Masterflex.com/singleuse

#### **Testing C-Flex® or Silicone Tubing?**

Try Puri-Flex™ tubing instead—it's our best tubing for your high-purity applications. Plus it offers lower spallation and longer pump life than silicone.

Masterflex.com/siloxane

#### **Technical Library**

Our Technical Library gives you access to a wealth of helpful technical articles, application-based resources, selection guides, white papers, operating manuals, newsletters, and more!

Masterflex.com/techInfo

#### **Videos**

Watch video tutorials on how to effectively use Masterflex tubing pumps.

Masterflex.com/Videos



#### **Chemical Compatibility Database**

With our Masterflex Chemical Compatibility Database, you can verify the compatibility of your fluid with our unrivaled offering of tubing formulations.

Masterflex.com/MflexChem



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### **CUSTOM CUT TUBING**

You tell us what tubing, how long, and how many pieces. We will take care of the rest!

Masterflex.com/CCT

#### **Puri-Flex® Tubing**

- Heat sealable and weldable
- Longest pump life when compared to silicone or many other TPE tubings
- Lowest spallation when compared to silicone or many other TPE tubings
- Ideal for sensitive cell work

#### **Puri-Prene™ Tubing**

- Long pump life; less drift over time for more accurate pumping
- Withstands repeated sterilization cycles but also suitable for single use

 Ideal for pharmaceutical, bioprocess, and critical process applications

#### **Puri-Clear® LL Tubing**

- Excellent chemical compatibility
- Optically clear to make fluid ID easier
- High elastic memory material handles viscous materials and holds a vacuum well
- Ideal for biologics, pharmaceuticals, and other aseptic industries

#### Platinum-Cured Silicone Tubing

- Slightly greater clarity
- Smooth surface; lower protein binding levels
- Fewer potential leachables
- Ideal for pharmaceutical and biotechnology use

### Peroxide-Cured Silicone Tubing

- Greater physical compression capability
- Economical, longer tubing life

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 Potential outgassing of peroxide products

				A	pplicat	tion su	uitabili	ity†				
Pump tubing formulation	Advantages	Meets classifications	Acids	Alkalies	Organic solvents	Pressure	Vacuum	Viscous	Sterile fluids	Gas permeability	Sterilization	
Puri-Flex®	Biocompatible. Heat sealable and weldable. Long pump life when compared to silicone or other TPE tubings. Low spallation when compared to silicone or some other TPE tubings. Very low protein binding. Cost effective.	USP Class VI FDA 21 CFR 177.2600 and 177.1810 REACH (non-DEHP) compliant ROHS compliant ADCF compliant	Sta	tic: –5	N/R ure rang	35°C (-			E	CO <sub>2</sub> : 1200 H <sub>2</sub> : — O <sub>2</sub> : 200 N <sub>2</sub> : 80	Sterilize by EtO, autoclave up to 135°C (275°F), or gamma irradiation up to 4.5 Mrad.	
	No halogens or phthalates. Translucent, clear to light white.	ADOF COMpliant			(pump 212°F)		30 to 1	100°C				
Puri-Prene™ xclusive	Excellent biocompatibility; long pump life. Withstands repeated sterilization cycles. Nontoxic, nonhemolytic, extremely low permeability, Resists acids, bases, and oxidizing	USP Class VI REACH (non-DEHP) compliant	G	G	N/R	G	G	E	E	CO <sub>2</sub> : 1200 H <sub>2</sub> : — O <sub>2</sub> : 200	Sterlize by EtO, autoclave, or	
	agents. Heat sealable, bondable, formable. Opaque, beige.	RoHS compliant ADCF compliant	Sta Dyi	itic: –{ namic	51 to 13 (pump 12°F)	32°C (			7)	N <sub>2</sub> : 80	gamma irradiation.	
Puri-Clear® LL	Clear for easy flow monitoring. Broad chemical resistance. Nontoxic, nonaging, nonoxidizing.	USP Class VI REACH (non-DEHP)	G	G	N/R	G	G	E	G	CO <sub>2</sub> : 560	Sterlize by EtO,	
xclusive	Low gas permeability. Smooth bore. High dielectric constant. Transparent, clear.	compliant ROHS compliant ADCF compliant	Sta Dyi	tic: -4	ire rang 15 to 74 (pump 04°F)	4°C (–				H <sub>2</sub> : — O <sub>2</sub> : 120 N <sub>2</sub> : 60	autoclave, or gamma irradiation.	
Silicone (platinum-cured)	Excellent biocompatibility. No leachable additives, DOP, or plasticizers; phthalate and latex-free; odorless and nontoxic, fungus-resistant.	USP Class V Extractables (Exceeds Class VI Implant) European Pharmacopoeia (EP 3.1.9) FDA 21 CFR 177.2600;	N/R	N/R	N/R	F	G	F	E	CO <sub>2</sub> : 20,132	Sterilize by EtO,	
MASTERITEX PUMP	No taste imparted to transported fluids. Weather, ozone, corona, and radiation resistant. Minimal tendency to take a set. Translucent, clear to light amber.	FDA 21 CFR 210 and 211; Exceeds 3A sanitary cGMPs; REACH (non-DEHP) compliant RoHS compliant ADCF compliant	Sta Dyi	tic: –{ namic	ire rang 50 to 23 (pump 212°F)	30°C (- ing): –			· ·)	H <sub>2</sub> : 6579 O <sub>2</sub> : 7961 N <sub>2</sub> : 2763	autoclave, or gamma irradiation.	
Silicone (peroxide-cured)	Excellent biocompatibility. No additives, plasticizers or DOP; odorless and nontoxic, fungus-resistant.	USP Class VI European Pharmacopoeia (EP 3.1.9) FDA 21 CFR 177.2600 Exceeds 3A sanitary	N/R	N/R	N/R	F	G	F	E	CO <sub>2</sub> : 20,132 H <sub>2</sub> : 6579	Sterilize by EtO or	
MASTERILEX PURAP	No taste imparted to transported fluids. Weather, ozone, corona, and radiation resistant. Minimal tendency to take a set. Translucent, clear to light amber.	standards REACH (non-DEHP) compliant ROHS compliant ADCF compliant	Sta Dyi	Temperature ran Static: –50 to 2 Dynamic (pump (–40 to 212°F		30°C (- ing): –			<del>-</del>	0 <sub>2</sub> : 7961 N <sub>2</sub> : 2763	autoclave.	
BioPharm Silicone (platinum-cured)	Ultra-smooth inner surface minimizes particle entrapment. Lower absorption; excellent biocompatibility; no leachable additive, DOP, or plasticizers.	USP Class VI European Pharmacopoeia (EP 3.1.9) FDA 21 CFR 177.2600	N/R	N/R	N/R	F	G	F	E	CO <sub>2</sub> : 25,147 H <sub>2</sub> : —	Sterilize by EtO,	
ASTERILEX PURA	Very low extractables. Odorless and nontoxic, fungus-resistant. No taste imparted to transported fluids. Weather, ozone, corona, and radiation resistant. Translucent, clear to light amber.	Exceeds 3A sanitary ant. standards		tic: –6 namic	ature range: -60 to 232°C (-75 to 450 iic (pumping): -40 to 100° to 212°F)				·)	0₂: 4715 N₂: 2284	Sterilize by EtO, autoclave, or gamma irradiation.	
BioPharm Plus Silicone (platinum-cured)	Similar to BioPharm Silicone, plus: Longest life of any silicone pump tubing. Lower spallation than regular silicone. Enhanced pressure capability. Fungus-resistant.	USP Class VI European Pharmacopoeia (EP 3.1.9) FDA 21 CFR 177.2600 Exceeds 3A sanitary	N/R	N/R	N/R	F	G	F	E	CO <sub>2</sub> : 25,147 H <sub>2</sub> : —	Sterilize by EtO,	
Alastraffex PUMP	Nontoxic, no leachable plasticizers.  Lower gas permeability than other silicones.  Translucent, clear to light amber.	standards REACH (non-DEHP) compliant RoHS compliant	Temperature range: Static: -60 to 232°C (-75 to 450°F) Dynamic (pumping): -40 to 100°C (-40 to 212°F)						)	0 <sub>2</sub> : 4715 N <sub>2</sub> : 2284	autoclave, or gamma irradiation.	

 $^{\dagger}\text{E}$  = Excellent, G = Good, F = Fair, P = Poor, N/R = not recommended, N/A = not available

### BioPharm Silicone Tubing (platinum-cured)

- Ultra-smooth inner surface minimizes particle entrapment
- Very low extractables, with documented biocompatibility for sensitive applications
- Ideal for lab, biotech, and pharmaceutical applications

#### BioPharm Plus Silicone Tubing (platinum-cured)

 All of the benefits of BioPharm silicone tubing, plus:

- Longest tubing life of any silicone pump tubing
- Lower spallation than regular silicone
- Enhanced pressure capability

#### **C-Flex® ULTRA Tubing**

- Combines biocompatibility of silicone with chemical resistance similar to Tygon
- Heat sealable, weldable, economical
- Longest pump life of any C-Flex formulation
- Lowest spallation and reduced residue

#### **C-Flex® Tubing**

- Combines biocompatibility of silicone with chemical resistance similar to Tygon
- Heat sealable, weldable, economical

#### **PharMed® BPT Tubing**

- Up to 10,000 hours of tubing life
- Resists ozone and UV radiation
- Noncytotoxic and nonhemolytic
- Ideal for tissue and cell culture
- Heat sealable and bondable

#### PharmaPure® Tubing

- Biocompatibility similar to PharMed BPT
- Long life under continuous pressure up to 40 psi (2.7 bar)
- Very low spallation and low extractables

#### Chem-Durance® Bio Tubing

- Excellent chemical resistance
- Excellent pumping life
- Low spallation
- USP Class VI specifications
- Masterflex exclusive

				Ap	plicat	ion su	itabili	ty†			
Pump tubing formulation	Advantages	Meets classifications	Acids	Alkalies	Organic solvents	Pressure	Vacuum	Viscous fluids	Sterile fluids	Gas permeability	Sterilization
C-Flex® ULTRA	Physical properties similar to silicone with chemical compatibility of Tygon®. Biocompatible. Heat sealable and weldable.	USP Class VI European Pharmacopoeia (EP 3.2.9) REACH (non-DEHP)	G	G	N/R	F	G	F	E	CO <sub>2</sub> : 2.1 H <sub>2</sub> : — O <sub>2</sub> : 1.1	Sterilize by gamma irradiation or one cycle of autoclave at 121°C (250°F).
Masterlex Pump	Longer pump life and lower spallation than C-Flex. Translucent.	compliant RoHS compliant ADCF compliant	Sta Dyr	tic: –4 namic (	re rang 5 to 12 (pumpi 212°F)	21°C (- ng):		250°F, 00°C	)	N <sub>2</sub> : 3.4	1 bar (15 psi) for 30 minutes.
C-Flex®	Physical properties similar to silicone with chemical compatibility of Tygon®. Inexpensive.	USP Class VI European Pharmacopoeia (EP 3.2.9) REACH (non-DEHP)	G	G	N/R	F	G	F	E	CO <sub>2</sub> : — H <sub>2</sub> : —	Sterilize by Et0, autoclave, or
MASTERILEX PUMP	Biocompatible. Heat sealable and weldable. Opaque, white.	compliant ROHS compliant ADCF compliant	Sta Dyr	tic: –4 namic (	re rang 5 to 12 (pumpi 212°F)	21°C (-		250°F; 00°C	1	0 <sub>2</sub> : 150 N <sub>2</sub> : —	gamma irradiation.
PharMed® BPT	Great for tissue and cell work— nontoxic and nonhemolytic. Long service life (up to 10,000 hrs); reduces tubing costs and pump downtime. Opaque to UV and visible light to	USP Class VI European Pharmacopoeia (EP 3.2.9) FDA 21 CFR 177.2600	G	G	N/R	G	G	E	E	CO <sub>2</sub> : 1200 H <sub>2</sub> : —	Sterilize by EtO, autoclave, or
Masterflex PUMP	nrotect light-sensitive fluids	REACH (non-DEHP) compliant RoHS compliant	Sta Dyr	tic: –5	(pumpi	2°C (-		270°F; 00°C	,	O <sub>2</sub> : 200 N <sub>2</sub> : 80	gamma irradiation up to 2.5 Mrad.
PharmaPure®	Nontoxic and nonhemolytic (similar to PharMed® BPT); biocompatible. Long life even under pressure; up to 1000 hours at 2.7 bar (40 ps).	USP Class VI FDA 21 CFR 177.2600 European Pharmacopoeia (FP 3.2.9)	G	G	N/R	G	G	Е	E	CO <sub>2</sub> : 1200 H <sub>2</sub> : —	Sterilize by EtO, autoclave, or
MASTERFLEX PUMP	Very low spallation—protects fluid purity. Low extractables. Low gas permeability. Opaque, off-white.	REACH (non-DEHP) compliant RoHS compliant	Sta Dyr	tic: –5	(pumpi	32°C (-		270°F; 00°C	,	O <sub>2</sub> : 200 N <sub>2</sub> : 80	gamma irradiation up to 2.5 Mrad.
Chem-Durance® Bio	Excellent chemical resistance. Excellent life and durability under pressure. Low spallation.	USP Class VI FDA 21 CFR 177.2600 REACH (non-DEHP)	E	Е	G	Е	E	Е	E	CO <sub>2</sub> : 745 H <sub>2</sub> : —	Sterilize by EtO, autoclave, or
MASTERFLEX PUMP	Plasticizer-free inner liner. High dielectric constant. Excellent biocompatibility. Opaque, beige.	ROHS compliant	Sta Dyr	tic: –6	re rang 0 to 74 (pumpi 04°F)	°C (–7				O₂: 200 N₂: 80	gamma irradiation.
PTFE	Chemically inert. Excellent chemical resistance. Will not leach into or absorb out of fluid being pumped. Extremely low gas permeability.	USP Class VI REACH (non-DEHP) compliant	E	E	E	G	G	E	G	CO <sub>2</sub> : 6.8 H <sub>2</sub> : —	Sterilize by EtO or
	Nontoxic. Virtually nonporous. Low coefficient of friction. Translucent, white.	RoHS compliant ADCF compliant	Sta Dyr	tic: –2 namic	re rang 40 to 2 (pumpi 302°F)	260°C ng): –		to 500 50°C	°F)	0 <sub>2</sub> : — N <sub>2</sub> : 1.0	autoclave.

#### **PTFE Tubing**

- Chemically inert; best chemical resistance of any pump tubing
- Sold in molded pump tubing elements
- Use with PTFE tubing pump head

#### Tygon® E-LFL Tubing

- Longest tubing life of all Tygon tubing formulations
- Broad chemical compatibility
- Low gas permeability
- Approved for pharmaceutical and biotechnology use

#### Tygon® E-Food Tubing

- Meets various food and sanitary regulations
- Unaffected by common commercial sanitizers
- Nonwetting properties allow flushcleaning and complete drainage
- Smooth inner surface

#### Tygon® E-Lab Tubing

- Ideal for general transfer applications
- Economical
- Nontoxic, nonaging, and nonoxidizing

### **Versilon™ 2001 Tubing** (formerly Tygon® Chemical)

- Best chemical resistance of Tygon formulations
- Compatible with some organics
- Plasticizer-free

### Tygon® F-4040-A Fuel & Lubricant Tubing

- Ideal for transferring hydrocarbons, gasoline, kerosene, heating oils, cutting compounds, and glycolbased coolants
- Not for use with concentrated strong acids or alkalies

### **Versilon™ A-60-N Tubing** (formerly Norprene®)

- Up to 10,000 hours of tubing life
- Best choice for pressure/vacuum applications
- Resists heat, ozone, acids, and alkalies
- Heat sealable and bondable
- Nonaging, nonoxidizing

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				Ap	plicat	ion sı	iitabili	ity†				
Pump tubing formulation	Advantages	Meets classifications	Acids	Alkalies	Organic solvents	Pressure	Vacuum	Viscous	Sterile fluids	Gas permeability	Sterilization	
Tygon® E-LFL	Longest life of all Tygon® peristaltic tubing. Clear for easy flow monitoring. Broad chemical resistance. Nonaging, nonoxidizing,	USP Class VI European Pharmacopia (EP 3.2.9) FDA 21 CFR 175.300	G	G	N/R	G	G	E	G	CO <sub>2</sub> : 563 H <sub>2</sub> : —	Sterilize by EtO or	
MASICALLEX PUMP	Low gas permeability. Smooth bore. Good for viscous fluids. High dielectric constant. Transparent, clear.	EU Food REACH (non-DEHP) compliant ROHS compliant ADCF compliant	Sta Dyr	tic: –4	re ranç 6 to 74 (pump 04°F)	i°C (∹				N <sub>2</sub> : 124 N <sub>2</sub> : 67	autoclave.	
<b>Tygon® E-Food</b> (B-44-4X)	Designed especially for handling food products. Bore is extremely smooth (better than most stainless steels) Nontoxic, will not affect taste or odor,	FDA 21 CFR 175.300 EU Food NSF-51 REACH (non-DEHP)	G	G	N/R	G	G	E	F	CO <sub>2</sub> : 270 H <sub>2</sub> : 97	Sterilize by EtO or	
Marialles Rusie	and clear for CIP and flow verification. Excellent nonweiting properties permit flush cleaning and complete drainage. High dielectric constant. Transparent, clear.	compliant ROHS compliant ADCF compliant Meets 3A sanitary standards	Sta Dyr	tic: -3	re ranç 6 to 74 (pump 04°F)	i°C (∹	32 to 1 to 40°	165°F) °C		O <sub>2</sub> : 60 N <sub>2</sub> : 30	autoclave.	
Tygon® E-Lab (E-3603)	Inexpensive tubing for general laboratory applications. Clear for easy flow monitoring. Handles virtually all inorganic chemicals.	USP Class VI FDA 21 CFR 175.300 EU Food NSF-51 PEACH (non-DEHP)		G	N/R	G	G	E	Р	CO <sub>2</sub> : 360 Hs: 97	Sterilize by EtO or	
MANUALEX PUNE	Nonaging, nonoxidizing. Low gas permeability. Good for viscous fluids. High dielectric constant. Transparent, clear.	REACH (non-DEHP) compliant ROHS compliant ADCF compliant	Static: -46 to Dynamic (pur			mperature range: tatic: -46 to 74°C (-51 to 165°F) ynamic (pumping): 0 to 40°C (32 to 104°F)				O <sub>2</sub> : 80 N <sub>2</sub> : 40	sterilize by Eto or autoclave.	
Versilon™ 2001 (formerly Tygon Chemical)	Best chemical resistance of any Tygon® formulation. Compatible with many polar solvents. Plasticizer-free.	FDA 21 CFR 175.300 REACH (non-DEHP) compliant	E E G G G		G	E	G	CO <sub>2</sub> : 114 H <sub>2</sub> : —	Sterilize by EtO, autoclave, or			
MASICALES PLANE	Clear for easy flow monitoring. Low extractability. Low gas permeability. High dielectric constant. Transparent, clear.	RoHS compliant ADCF compliant	Sta Dyr	tic: –7	(pump	°C (–		135°F °C	)	0 <sub>2</sub> : 19 N <sub>2</sub> : 9	gamma irradiation.	
Tygon® Fuel & Lubricant (F-4040-A)	Specially formulated to transport hydrocarbons, petroleum products, and distillates. Suitable for gasoline, kerosene, heating oils, cutting fluids, and qlycol-based	ng REACH (non-DEHP)		G	N/R	G	G	E	Р	CO <sub>2</sub> : 100 Н <sub>э</sub> : 97	Sterilization is not	
	coolants. Minimum extractability. Low gas permeability. High dielectric constant. Transparent, yellow.	ROHS compliant ADCF compliant	Sta Dyr	tic: -3	re rang 7 to 74 (pump 04°F)	ͰC (∹				0 <sub>2</sub> : 22 N <sub>2</sub> : 12	recommended.	

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#### Sterilization

Ethylene oxide (EtO): Coil tubing loosely in nonlinting cloth or sterilization paper. Follow the sterilization equipment manufacturer's directions as to gas type, concentration, times, and temperatures; maintain humidity within the prescribed limits, generally between 30 to 65%.

Standard gravity autoclave: Coil tubing loosely in nonlinting cloth or sterilizing paper, and place in a clean, open tray for 30 minutes at 121°C (250°F) at 1 kg/cm² (15 psi); air dry at max 66°C (150°F) for 2 to 2½ hours until clear.

### Tygon® A-60-F Food & Beverage Tubing

(formerly Norprene® Food)

- Ideal for high-temperature food and beverage applications
- Similar characteristics as Versilon™ 2001 tubing
- Meets FDA and NSF standards

#### GORE® STA-PURE® Pump Tubing – Series PCS

 Unique composite of expanded PTFE and platinum-cured silicone

- Stable flow rates achievable up to 100 psig\*
- No raw materials of animal origin

#### GORE® STA-PURE® Pump Tubing — Series PFL

- Unique composite of expanded PTFE and platinum-cured perfluoroelastomer
- Greater chemical resistance than Series PCS
- Stable flow rates achievable up to 60 psig\*
- No raw materials of animal origin

#### Viton® FDA-Compliant Tubing

- Excellent chemical resistance
- Resists corrosives, solvents, and oils at elevated temperatures

#### Solva™ Tubing

- Resists embrittlement and swelling due to hydrocarbon exposure
- Specially formulated to transport hydrocarbons, petroleum products, and distillates
- Ideal for fuels and industrial lubricants such as gasoline, kerosene, heating oils, cutting compounds, and glycol-based coolants

\*Actual performance depends on the specific system in which the tubing is used and may vary depending on the pump and its integration into the system.

				Ap	plicat	ion su	ıitabili	ity†			
Pump tubing formulation	Advantages	Meets classifications	Acids	Alkalies	Organic solvents	Pressure	Vacuum	Viscous fluids	Sterile fluids	Gas permeability	Sterilization
Versilon™ A-60-N (formerly Norprene)	Best choice for vacuum/pressure applications. Offers longest pump tubing life. Heat, ambient ozone resistant. Good resistance to acids/alkalies. Black color hides dirt and dust. Heat sealable, nonaging, and nonoxidizing. High dielectric constant. High-pressure version available. Opaque, black.	NSF-51 REACH (non-DEHP) compliant RoHS compliant	Sta Dyr	tic: -5	N/R re rang 1 to 13 (pumpi 12°F)	2°C (-			N/R	CO <sub>2</sub> : 1200 H <sub>2</sub> : — O <sub>2</sub> : 200 N <sub>2</sub> : 80	Sterilize by EtO, autoclave, or gamma irradiation.
Tygon® A-60-F (formerly Norprene Food)	Similar to Norprene® but with FDA approval. Excellent for food/dairy applications. Longest life, good flow consistency. Heat and ozone resistant. Good resistance to acids/alkalies. Heat sealable, nonaging, and nonoxidizing. High dielectric constant. Opaque, beige.	FDA 21 CFR 177.2600 NSF-51 REACH (non-DEHP) compliant RoHS compliant	Sta Dyr	tic: –5	N/R re rang 1 to 13 (pumpi 12°F)	2°C (-			G	CO <sub>2</sub> : 1200 H <sub>2</sub> : — O <sub>2</sub> : 200 N <sub>2</sub> : 80	Sterilize by EtO, autoclave, or gamma irradiation.
GORE® STA-PURE®, Series PCS	Unique composite structure adds strength and flex durability Greater security against rupture up to 100 psig* Consistent flow rate over long duration of use Withstands rigors of CIP/SIP processing	USP Class VI USP <87> USP Physicochemical Tests Compliant with restricted substances per REACH and RoHS No raw materials of animal origin			N/R re rang lasterfl		G	G	Е	_	Sterilize by autoclave or SIP (steam in place).
GORE® STA-PURE®, Series PFL	Unique composite structure adds strength and flex durability Greater chemical resistance than Series PCS Stable flow rates achievable to 60 psig* Withstands rigors of CIP/SIP processing	USP Class VI USP <87> USP Physicochemical Tests Compliant with restricted substances per REACH and RoHS No raw materials of animal origin			E re rang lasterfl		G	G	Е	-	Sterilize by autoclave or SIP (steam in place).
Viton® FDA-Compliant	Perfect for food and lab applications where FDA compliance is required. Excellent chemical resistance. Resistant to corrosives, solvents,	FDA 21 CFR 177.2600	E	E	Variable—test before using	G	G	G	F	CO <sub>2</sub> : 76 to 79 H <sub>2</sub> : —	Sterilization is not
Masterflex' PUMP		ADCF compliant	Sta Dyr	tic: -3	re rang 2 to 20 (pumpi )2°F)	5°C (-			)	O <sub>2</sub> : 13 to 15 N <sub>2</sub> : 4.3	recommended.
Solva™ Exclusive	Resists most hydrocarbons, embrittlement, and swelling. Thermoplastic, PVC-based material with plasticizer, firm (stiff) material. Ozone- and UV-resistant, minimal extractability. Low gas permeability. High dielectric constant. Transparent, yellow.	Compliant with restricted substances per REACH and ROHS No raw materials of animal origin	Sta Dyr	tic: -3	N/R re rang 7 to 74 (pumpi 04°F)	°C (–3			F	CO <sub>2</sub> : 100 H <sub>2</sub> : 97 O <sub>2</sub> : 22 N <sub>2</sub> : 12	N/A

 $<sup>^{\</sup>dagger}E$  = Excellent, G = Good, F = Fair, P = Poor, N/R = not recommended, N/A = not available

#### **ISMATEC**\* Pump Tubing

- Color-coded stops provide easy identification
- Precision extruded to tight tolerances for high repeatability, accuracy and reproducibility
- Extension tubing can be connected with barbed fittings or by splicing
- Flared ends are available
- How to Order: Choose a tubing material to determine the catalog number prefix, then find your desired tube ID to determine the suffix. Combine the two for a complete catalog number (e.g. 96518-10).

				lamataa sira	09	10	12	14	10	22	24	ne	20	20
				Ismatec size				14	18	22		26	28	30
T. M		1 11.	01 /:1	Tube ID (mm)	0.13	0.19	0.25	0.38	0.51	0.64	0.76	0.89	1.02	1.14
Tubing	T. a. i	Length	Qty/pk	Color ID*	O/BK	0/R	0/B	0/G	0/Y	0/W	BK/BK	0/0	W/W	R/R
	2-stop	40.6 cm (16")	12	96518-XX		-10	-12	-14	-18	-22	-24	-26	-28	-30
Puri-Flex®	3-stop	40.6 cm (16")	12	96519-XX		-10	-12	-14	-18	-22	-24	-26	-28	-30
	Extension	15.2 m (50 ft)	1	96418-XX		-10	-12	-14	-18	-22	-24	-26	-28	-30
	2-stop	40.6 cm (16")	12	05635-XX			-12	-14	-18	-22	-24	-26	-28	-30
Puri-Prene™	3-stop	40.6 cm (16")	12	05636-XX			-12	-14	-18	-22	-24	-26	-28	-30
	Extension	15.2 m (50 ft)	1	05367-XX		_	-12	-14	-18	-22	-24	-26	-28	-30
	2-stop	40.6 cm (16")	12	95663-XX	-09	-10	-12	-14	-18	-22	-24	-26	-28	-30
	3-stop	40.6 cm (16")	12	95625-XX		-10	-12	-14	-18	-22	-24	-26	-28	-30
Puri-Clear® LL	Extension	15.2 m (50 ft)	1	95679-XX	-09	-10	-12	-14	-18	-22	-24	-26	-28	-30
	Flared, 2-stop	40.6 cm (16")	12	97616-XX	-09	-10	-12	-14	-18	-22	-24	-26	-28	-30
	Flared, 3-stop	40.6 cm (16")	12	97617-XX	_	-10	-12	-14	-18	_	_	-26	-28	-30
0.1.	2-stop	40.6 cm (16")	6	95402-XX	_	_	_	_	_	-22	-24	-26	-28	-30
Silicone (platinum-cured)	3-stop	40.6 cm (16")	6	95403-XX	_	_	_	_	_	-22	-24	-26	-28	-30
(piatiliulii-culeu)	Extension	15.2 m (50 ft)	1	95412-XX	_	_	_	_	_	-22	-24	-26	-28	-30
	2-stop	40.6 cm (16")	6	07616-XX	_	_	-12	-14	-18	-22	-24	-26	-28	-30
Silicone	3-stop	40.6 cm (16")	6	07624-XX	_	_	_	_	-18	-22	-24	-26	-28	-30
(peroxide-cured)	Extension	15.2 m (50 ft)	1	07625-XX	_	-10	-12	-14	-18	-22	-24	-26	-28	-30
C-Flex®	Extension	15.2 m (50 ft)	1	95718-XX	_	-10	-12	_	-18	_	_	-26	_	-30
	2-stop	40.6 cm (16")	12	95723-XX	_	-10	-12	-14	-18	-22	-24	-26	-28	-30
PharMed® BPT	3-stop	40.6 cm (16")	12	95714-XX	_	-10	-12	-14	-18	-22	-24	-26	-28	-30
	Extension	30.4 m (100 ft)	1	95809-XX	_	-10	-12	-14	-18	-22	-24	-26	-28	-30
PharMed® BPT,	2-stop	40.6 cm (16")	6	95692-XX	_		-12		-18			-26	-28	_
Autoclavable	3-stop	40.6 cm (16")	6	95693-XX			-12		-18	_		-26	-28	_
	2-stop	40.6 cm (16")	6	96327-XX				-14	-18	_	-24	-26	_	-30
Chem-Durance®	3-stop	40.6 cm (16")	6	96328-XX				-14	-18	_	-24	-26	_	-30
Bio	Extension	30.4 m (100 ft)	1	96329-XX				-14	-18		-24	-26		-30
	2-stop	40.6 cm (16")	12	96449-XX	_	-10	-12	-14	-18	-22	-24	-26	-28	-30
Tygon® E-LFL	3-stop	40.6 cm (16")	12	96450-XX		-10	-12	-14	-18	-22	-24	-26	-28	-30
Iyyuli" E-LFL		· , ,	1	06449-XX		-10	-12	-14	-18	-22	-24	-26	-28	-30
	Extension	30.4 m (100 ft)	12			-10	-12		-			-26		
Tygon® E-Food	2-stop	40.6 cm (16")		96457-XX					-18	_				-30
(B-44-4X)	3-stop	40.6 cm (16")	12	96458-XX		_	-12		-18	_		-26		-30
	Extension	30.4 m (100 ft)	1	06457-XX	_	-10	-12		-18		_	-26	_	-30
Tygon® E-Lab	2-stop	40.6 cm (16")	12	96460-XX	-09	-10	-12	-14	-18	-22	-24	-26	-28	-30
(E-3603)	3-stop	40.6 cm (16")	12	96461-XX	-09	-10	-12	-14	-18	-22	-24	-26	-28	-30
<u> </u>	Extension	30.4 m (100 ft)	1	06460-XX	-09	-10	-12	-14	-18	-22	-24	-26	-28	-30
Versilon™ 2001	2-stop	40.6 cm (16")	6	96465-XX				-14	_	-22			-28	
(formerly Tygon	3-stop	40.6 cm (16")	6	96466-XX		_		-14	_	-22			-28	_
Chemical)	Extension	10.1 m (33 ft)	1	96467-XX				-14		-22			-28	<u> </u>
Viton®	2-stop	30.5 cm (12")	12	97628-XX		_			-18	-22	-24	-26	-28	-30
FDA-Compliant	3-stop	30.5 cm (12")	12	97629-XX	_	_	_	_	-18	-22	-24	-26	-28	-30
A compliant	Extension	15.2 m (50 ft)	1	97632-XX	_	_	_	_	-18	-22	-24	-26	-28	-30
	2-stop	40.6 cm (16")	12	95606-XX	_	-10	-12	-14	-18	-22	-24	-26	-28	-30
	3-stop	40.6 cm (16")	12	95605-XX	_	-10	-12	-14	-18	-22	-24	-26	-28	-30
Solva™	Extension	15.2 m (50 ft)	1	95712-XX	_	-10	-12	-14	-18	-22	-24	-26	-28	-30
	Flared, 2-stop	40.6 cm (16")	12	95598-XX	_	-10	-12	-14	-18	-22	-24	-26	-28	-30
	Flared, 3-stop	40.6 cm (16")	12	95599-XX	_	-10	-12	-14	-18	-22	-24	-26	-28	-30
	i .a.ou, o otop	1		20000										

\*Color ID key: B = blue, BK = black, G = green, GY = gray, O = orange, P = purple, R = red, W = white, Y = yellow

More sizes on next page

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#### **ISMATEC**\* Pump Tubing

- Color-coded stops provide easy identification
- Precision extruded to tight tolerances for high repeatability, accuracy and reproducibility
- Extension tubing can be connected with barbed fittings or by splicing
- Flared ends are available
- How to Order: Choose a tubing material to determine the catalog number prefix, then find your desired tube ID to determine the suffix. Combine the two for a complete catalog number (e.g. 96518-10).

Tubing   2-stop   3-stop   Extension   1-stop   2-stop   3-stop   3-s	•	Oty/pk  12  12  1  12  12  12  12  12  12  12	Ismatec size Tube ID (mm) Color ID* 96518-XX 96518-XX 96518-XX 05635-XX 05636-XX 05367-XX 95663-XX 95663-XX 956679-XX 97616-XX 97617-XX 95402-XX 95412-XX 07616-XX	32 1.3 GY/GY -32 -32 -32 -32 -32 -32 -32 -32 -32 -32	34 1.42 Y/Y -34 -34 -34 -34 -34 -34 -34 -34	36 1.52 Y/B -36 -36 -36 -36 -36 -36 -36 -36 -36 -36	38 1.65 B/B -38 -38 -38 -38 -38 -38 -38 -38 -38 -38	40 1.85 G/G40 -40 -40 -40 -40 -40 -40 -40 -40	42 2.06 P/P -42 -42 -42 -42 -42 -42 -42 -42	2.29 P/BK -44 -44 -44 -44 -44 -44 -44	48 2.79 P/W -48 -48 -48 -48 -48 -48	49 3.17 BK/W ————————————————————————————————————
Puri-Flex®	40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16")	12 12 11 12 12 11 12 12 12 11 12 12 12 1	Color ID* 96518-XX 96519-XX 96519-XX 96418-XX 05635-XX 05636-XX 05636-XX 95663-XX 95663-XX 956679-XX 97617-XX 97617-XX 95402-XX 95403-XX	GY/GY -32 -32 -32 -32 -32 -32 -32 -32 -32 -32	-34 -34 -34 -34 -34 -34 -34 -34 -34 -34	Y/B -36 -36 -36 -36 -36 -36 -36 -36 -36 -36	B/B -38 -38 -38 -38 -38 -38 -38 -38 -38 -38	G/G40 -40 -40 -40 -40 -40 -40 -40 -40	P/P -42 -42 -42 -42 -42 -42 -42 -42 -42	P/BK -44 -44 -44 -44 -44 -44 -44 -44	P/W -48 -48 -48 -48 -48 -48 -48 -48	BK/W — — — — — — — — — — — — — — — — — — —
Puri-Flex®	40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16")	12 12 11 12 12 11 12 12 12 11 12 12 12 1	96518-XX 96519-XX 96418-XX 05635-XX 05636-XX 05367-XX 95663-XX 95625-XX 95679-XX 97616-XX 97617-XX 95402-XX 95403-XX	-32 -32 -32 -32 -32 -32 -32 -32 -32 -32	-34 -34 -34 -34 -34 -34 -34 -34 -34 -34	-36 -36 -36 -36 -36 -36 -36 -36 -36 -36	-38 -38 -38 -38 -38 -38 -38 -38 -38 -38	-40 -40 -40 -40 -40 -40 -40	-42 -42 -42 -42 -42 -42 -42 -42	-44 -44 -44 -44 -44 -44 -44	-48 -48 -48 -48 -48 -48 -48	
Puri-Flex®         3-stop	40.6 cm (16")  15.2 m (50 ft)  40.6 cm (16")  15.2 m (50 ft)  40.6 cm (16")  15.2 m (50 ft)	12 1 12 12 12 1 12 12 1 12 12 12 16 6 6 1 6	96519-XX 96418-XX 05635-XX 05636-XX 05367-XX 95663-XX 95625-XX 95679-XX 97616-XX 97617-XX 95402-XX 95403-XX	-32 -32 -32 -32 -32 -32 -32 -32 	-34 -34 -34 -34 -34 -34 -34 -34 	-36 -36 -36 -36 -36 -36 -36 -36 	-38 -38 -38 -38 -38 -38 -38 -38 -38 -38	-40 -40 -40 -40 -40 -40	-42 -42 -42 -42 -42 -42	-44 -44 -44 -44 -44	-48 -48 -48 -48 -48	_ _ _ _
Extension   2-stop   3-stop   Extension   2-stop   3-stop   Extension   2-stop   3-stop   Extension   3-stop   Extension   Extension   Extension   Extension   Extension   2-stop   3-stop   Extension   Extens	15.2 m (50 ft) 40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16") 15.2 m (50 ft)	1 12 12 11 12 12 12 12 12 16 6 6 11 6 6 11	96418-XX 05635-XX 05636-XX 05367-XX 95663-XX 956625-XX 95679-XX 97616-XX 97617-XX 95402-XX 95402-XX 95412-XX	-32 -32 -32 -32 -32 -32 -32   -32	-34 -34 -34 -34 -34 -34 -34   -34	-36 -36 -36 -36 -36 -36 -36 	-38 -38 -38 -38 -38 -38 -38 -38	-40 -40 -40 -40 -40 -40	-42 -42 -42 -42 -42 -42	-44 -44 -44 -44 -44	-48 -48 -48 -48 -48	_
Puri-Prene™  2-stop 3-stop Extension 2-stop 3-stop Extension 2-stop 3-stop Extension Flared, 2-s' Flared, 3-s' Silicone (platinum-cured)  Silicone (peroxide-cured)  C-Flex®  Extension 2-stop 3-stop Extension 2-stop 2-stop 3-stop Extension 2-stop Extension 2-stop 2-stop 3-stop Extension 2-stop 2-stop 3-stop Extension 2-stop 2-stop 3-stop Extension 2-stop Extension 2-stop 2-stop 3-stop Extension 2-stop Extension 2-stop 3-stop Extension 2-stop 2-stop 3-stop Extension 2-stop 2-stop 3-stop Extension 2-stop 3-stop	40.6 cm (16") 50.0 40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16") 15.2 m (50 ft)	12 12 11 12 12 12 11 12 12 12 6 6 6 1	05635-XX 05636-XX 05367-XX 95663-XX 95625-XX 95679-XX 97616-XX 97617-XX 95402-XX 95403-XX 95412-XX	-32 -32 -32 -32 -32 -32   -32	-34 -34 -34 -34 -34 -34  -	-36 -36 -36 -36 -36 -36 -36 	-38 -38 -38 -38 -38 -38 	-40 -40 -40 -40 -40	-42 -42 -42 -42 -42	-44 -44 -44 -44	-48 -48 -48 -48	_
Puri-Prene™         3-stop           Extension         2-stop           3-stop         2-stop           3-stop         Extension           Flared, 2-stop         3-stop           Silicone (platinum-cured)         2-stop           Silicone (peroxide-cured)         3-stop           Extension         2-stop           3-stop         Extension           2-stop         3-stop           Extension         2-stop           Autoclavable         3-stop           Extension         2-stop           Tygon® E-LFL         3-stop           Extension         2-stop           3-stop         Extension           2-stop         3-stop           Extension         2-stop           3-stop         Extension	40.6 cm (16")  15.2 m (50 ft)  40.6 cm (16")  40.6 cm (16")  15.2 m (50 ft)  40.6 cm (16")  15.2 m (50 ft)	12 1 12 12 12 1 12 12 12 6 6 6 1	05636-XX 05367-XX 95663-XX 95625-XX 95679-XX 97616-XX 97617-XX 95402-XX 95403-XX	-32 -32 -32 -32 -32 -32   -32 -32	-34 -34 -34 -34 -34   -34	-36 -36 -36 -36 -36 	-38 -38 -38 -38 -38 -38	-40 -40 -40 -40	-42 -42 -42 -42	-44 -44 -44	-48 -48 -48	_
Extension   2-stop   3-stop   Extension   Flared, 2-stop   3-stop   Extension   Flared, 2-stop   3-stop   Extension   Extension   2-stop   3-stop   Extension   Extension   Extension   Extension   2-stop   3-stop   Extension   Extension   2-stop   Extension   Extension   Extension   Extension   Extension   Extension   Extension   Extension   2-stop   Extension   Extension   Extension   Extension   2-stop   Extension   2-stop	15.2 m (50 ft) 40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 0p 40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16")	1 12 12 1 1 12 12 12 6 6 6 1 6 6 1 1	95663-XX 95663-XX 95625-XX 95679-XX 97616-XX 97617-XX 95402-XX 95403-XX 95412-XX	-32 -32 -32 -32  - - -32 -32	-34 -34 -34 -34   -34	-36 -36 -36 -36 	-38 -38 -38 -38 	-40 -40 -40 -40	-42 -42 -42	-44 -44 -44	-48 -48 —	-49 
Puri-Clear® LL	40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) pp 40.6 cm (16") 15.2 m (50 ft) 15.2 m (50 ft)	12 12 1 12 12 6 6 6 1 6 6	95663-XX 95625-XX 95679-XX 97616-XX 97617-XX 95402-XX 95403-XX 95412-XX	-32 -32 -32  - - -32 -32	-34 -34 -34   -34	-36 -36 -36 	-38 -38 -38 	-40 -40 -40	-42 -42	-44 -44	-48 —	-49 —
Puri-Clear® LL	40.6 cm (16") 15.2 m (50 ft) py 40.6 cm (16") 15.2 m (50 ft) 15.2 m (50 ft)	12 1 12 12 6 6 6 1 6 6	95625-XX 95679-XX 97616-XX 97617-XX 95402-XX 95402-XX 95403-XX	-32 -32   -32 -32	-34 -34   -34	-36 -36 —	-38 -38 —	-40 -40 —	-42	-44	_	=
Puri-Clear® LL         Extension           Flared, 2-st         Flared, 3-st           Flared, 3-st         2-stop           3-stop         Extension           2-stop         3-stop           Extension         2-stop           3-stop         Extension           2-stop         3-stop           Extension         2-stop           Autoclavable         3-stop           Extension         2-stop           Chem-Durance® Bio         3-stop           Extension         2-stop           Tygon® E-LFL         3-stop           Extension         2-stop           Extension         2-stop           2-stop         2-stop	15.2 m (50 ft) op 40.6 cm (16") op 40.6 cm (16") 40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16") 15.2 m (50 ft) 15.2 m (50 ft) 15.2 m (50 ft)	1 12 12 6 6 6 1 6 6	95679-XX 97616-XX 97617-XX 95402-XX 95403-XX 95412-XX	-32 — — — -32 -32	-34   -34	-36 — —	-38 — —	-40 —			_	
Flared, 2-st   Flared, 3-st	op 40.6 cm (16") op 40.6 cm (16") 40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 15.2 m (50 ft)	12 12 6 6 1 6 1 6	97616-XX 97617-XX 95402-XX 95403-XX 95412-XX	 -32 -32	  -34	_	_	_	_			
Flared, 3-st   Silicone (platinum-cured)   2-stop     Silicone (peroxide-cured)   2-stop     Stension   2-stop     Extension   2-stop     Extension   2-stop     PharMed® BPT   3-stop     Extension   2-stop     Autoclavable   3-stop     Chem-Durance® Bio   3-stop     Extension   2-stop     Tygon® E-LFL   3-stop     Extension   2-stop	40.6 cm (16") 40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 15.2 m (50 ft)	12 6 6 1 6 6 1	97617-XX 95402-XX 95403-XX 95412-XX	-32	-	-36	_			_	_	
2-stop   3-stop   2-stop   3-stop   Extension   2-stop   3-stop   Extension   2-stop   3-stop   Extension   2-stop   2	40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 15.2 m (50 ft)	6 6 1 6 6	95402-XX 95403-XX 95412-XX	-32	-	-36			_	_	_	
Silicone (platinum-cured)         3-stop           Extension         2-stop           Silicone (peroxide-cured)         3-stop           Extension         2-stop           Extension         2-stop           PharMed® BPT         3-stop           Extension         2-stop           Autoclavable         3-stop           Extension         2-stop           Chem-Durance® Bio         3-stop           Extension         2-stop           Tygon® E-LFL         3-stop           Extension         2-stop           2-stop         3-stop           Extension         2-stop	40.6 cm (16") 15.2 m (50 ft) 40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 15.2 m (50 ft)	6 1 6 6	95403-XX 95412-XX	-32	-		-38	-40	-42	-44	-48	_
Extension	15.2 m (50 ft) 40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 15.2 m (50 ft)	1 6 6 1	95412-XX			-36	-38	-40	-42	-44	-48	_
2-stop   3-stop   2-stop   3-stop   Extension   2-stop   Extension   2-stop   Extension   2-stop   Extension   2-stop   Extension   2-stop   Extension   2-stop   2-stop   Extension   2-stop   Extension   2-stop   3-stop   Extension   2-stop   2-stop   3-stop   Extension   2-stop   Extension   2-stop   2-st	40.6 cm (16") 40.6 cm (16") 15.2 m (50 ft) 15.2 m (50 ft)	6 6 1			-34	-36	-38	-40	-42	-44	-48	_
Silicone (peroxide-cured)         3-stop Extension           C-Flex®         Extension           2-stop         2-stop           Extension         2-stop           Extension         2-stop           Extension         2-stop           3-stop         2-stop           Chem-Durance® Bio         3-stop           Extension         2-stop           Tygon® E-LFL         3-stop           Extension         2-stop           3-stop         2-stop           2-stop         3-stop           Extension         2-stop	40.6 cm (16") 15.2 m (50 ft) 15.2 m (50 ft)	6		-32	-34	-36	-38	-40	-42	-44	-48	_
Extension	15.2 m (50 ft) 15.2 m (50 ft)	1	07624-XX	-32	-34	-36	-38	-40	-42	-44	-48	
C-Flex®         Extension           2-stop         2-stop           3-stop         Extension           PharMed® BPT, Autoclavable         2-stop           3-stop         2-stop           Chem-Durance® Bio         3-stop           Extension         2-stop           Tygon® E-LFL         3-stop           Extension         2-stop           3-stop         3-stop	15.2 m (50 ft)		07625-XX	-32	-34	-36	-38	-40	-42	-44	-48	<b> </b>
PharMed® BPT   3-stop			95718-XX		-34	_	_	_	-42		-48	_
PharMed® BPT         3-stop           Extension         Extension           PharMed® BPT, Autoclavable         2-stop           Chem-Durance® Bio         3-stop           Extension         2-stop           Tygon® E-LFL         3-stop           Extension         2-stop           2-stop         2-stop	10.0 0111 (10 )	12	95723-XX	-32	-34	-36	-38	-40	-42	-44	-48	
Extension	40.6 cm (16")	12	95714-XX	-32	-34	-36	-38	-40	-42	-44	-48	
PharMed® BPT, Autoclavable   2-stop   3-stop   2-stop	30.4 m (100 ft)	1	95809-XX	-32	-34	-36	-38	-40	-42	-44	-48	_
Autoclavable   3-stop   2-stop   2-stop   3-stop   Extension   2-stop   2-stop   2-stop   Extension   2-stop   Extension   2-stop   Extension   2-stop   2	40.6 cm (16")	6	95692-XX	-32	_	-36	_	_	-42		-48	_
2-stop   3-stop   Extension   2-stop	40.6 cm (16")	6	95693-XX	-32		-36			-42		-48	_
Chem-Durance® Bio         3-stop           Extension         2-stop           Tygon® E-LFL         3-stop           Extension         2-ston	40.6 cm (16")	6	96327-XX	-32	-34	-36			-42		-48	
Extension 2-stop Tygon® E-LFL 3-stop Extension 2-ston	40.6 cm (16")	6	96328-XX		-34	-36			-42		-48	
2-stop     3-stop	30.4 m (100 ft)	1	96329-XX		-34	-36			-42		-48	
Tygon® E-LFL 3-stop Extension 2-stop	40.6 cm (16")	12	96449-XX		-34	-36		-40	-42		-48	
Extension 2-stop	40.6 cm (16")	12	96450-XX		-34	-36		-40	-42		-48	
2-ston	30.4 m (100 ft)	1	06449-XX		-34	-36		-40	-42		-48	
	40.6 cm (16")	12	96457-XX		-34	_		<del></del>	-42	_	-48	_
Tygon® E-Food	40.6 cm (16")	12	96458-XX		-34	_			-42	_	-48	_
(B-44-4X) Extension	30.4 m (100 ft)	1	06457-XX	_	-34	_			-42	_	-48	
2-stop	40.6 cm (16")	12	96460-XX	-32	-34	-36	-38	-40	-42	-44	-48	-49
Tygon® E-Lab (E-3603) 3-stop	40.6 cm (16")	12	96461-XX	-32	-34	-36	-38	-40	-42	-44	-48	-49
Extension	30.4 m (100 ft)	1	06460-XX	-32	-34	-36	-38	-40	-42	-44	-48	-49
2-stop	40.6 cm (16")	6	96465-XX	— OZ	_	-36	_	<del></del>	-42	_	-48	<b>—</b>
Versilon™ 2001 (for-	40.6 cm (16")	6	96466-XX			-36			-42		-48	
merly Tygon Chemical) Extension	10.1 m (33 ft)	1	96467-XX			-36			-42		-48	
2-stop	30.5 cm (12")	12	97628-XX	-32	-34	-36	-38	-40	-42	-44	-48	_
Viton® FDA-Compliant 3-stop	30.5 cm (12")	12	97629-XX	-32	-34	-36	-38	-40	-42	-44	-48	
Extension	15.2 m (50 ft)	1	97632-XX	-32	-34	-36	-38	-40	-42	-44	-48	
2-stop	40.6 cm (16")	12	95606-XX	-32	-34	-36	-38	-40	-42	-44	-48	
3-stop	40.6 cm (16")	12	95605-XX	-32	-34	-36	-38	-40	-42	-44	-48	ΗΞ-
Solva <sup>™</sup> Extension	<del>1</del> 0.0 0111 (10 )	1	95712-XX	-32	-34	-36	-38	-40	-42	-44	-48	-
Flared, 2-si	15.2 m /50 ft\	12	95712-XX 95598-XX	-32	-34	-30	-30	-40	-42	-44	-46	
Flared, 2-s	15.2 m (50 ft)	12	95599-XX 95599-XX	<del>-</del>								<del>-</del>

<sup>\*</sup>Color ID key: B = blue, BK = black, G = green, GY = gray, O = orange, P = purple, R = red, W = white, Y = yellow

Distributed by: Fiedler Scientific Instruments, s.r.o. info@lab-eu.com info@pristroje.cz

### **MASTERFLEX®** L/S® Precision Pump Tubing

- L/S pump tubing is manufactured to extremely close tolerances that match our L/S pump heads, ensuring accurate, repeatable flow and long tubing life
- Our pump tubing is factory-tested and optically inspected to provide the best performance from your peristaltic pump

	L/S Precision pump tubing					
Pump tubing cross sections	L/S 13	L/S 14	L/S 16	L/\$ 25	<b>O</b>	L/S 18
Inside diameter (nominal)	0.8 mm (0.03")	1.6 mm (0.06")	3.1 mm (0.12")	4.8 mm (0.19")	6.4 mm (0.25")	7.9 mm (0.31")
Hose barb size	1.6 mm (½16")	1.6 mm (½16")	3.2 mm (½")	4.8 mm (3/16")	6.4 mm (½")	9.5 mm (3/8")
	1.0 11111 (716 )	- ( )	3.2 11111 (78 )	4.0 11111 (716 )	0.4 111111 (74 )	9.5 11111 (78 )
Flow range (approximate) <sup>†</sup> with 1 to 600 rpm drive	0.06 to 36 mL/min	0.21 to 130 mL/min	0.8 to 480 mL/min	1.7 to 1000 mL/min	2.8 to 1700 mL/min	3.8 to 2300 mL/min
Maximum pressure‡	2.7 bar (	(40 psig)	2.7 bar (40 psig)	2 .4 bar (35 psig)	1.4 bar (20 psig)	1.0 bar (15 psig)
Maximum vacuum‡	660 mm H	g (26" Hg)	660 mm H	lg (26" Hg)	510 mm F	lg (20" Hg)
Suction lift‡	8.8 m H <sub>2</sub> O	(29 ft H <sub>2</sub> 0)	8.8 m H <sub>2</sub> 0	(29 ft H <sub>2</sub> 0)	6.7 m H <sub>2</sub> O	(22 ft H <sub>2</sub> 0)
†Determined under the followin		F mai at a state	† A - t 1 f		hina famarilatian —alı	

L/S Pump Head Compatibility

 $\ensuremath{^{\ddagger}}\xspace$  Actual performance varies depending on tubing formulation—values shown are for firm tubing.

					ımp Hea			L/S 1						
		de Lie	\$000 \$2000 \$	(4) (6) (1) (6) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	William S	Str. Company	(m) /	Refer /						
Tubing	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	. \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			Mille		, id	L/S 1	3††	L/S 14 <sup>††</sup>	L/S 16	L/S 25	L/S 17	L/S 18
Puri-Flex® 7.6 m (25 ft)/pk	1	1	1	<b>/</b>	1	<b>/</b>		96419	-13	96419-14	96419-16	96419-25	96419-17	96419-18
Silicone (platinum-cured) 7.6 m (25 ft)/pk	1	1	1	1	1	1	1	96410	-13	96410-14	96410-16	96410-25	96410-17	96410-18
Silicone (peroxide-cured) 7.6 m (25 ft)/pk	<b>✓</b>	<b>✓</b>	<b>✓</b>	✓	<b>✓</b>	<b>✓</b>	<b>✓</b>	96400	-13	96400-14	96400-16	96400-25	96400-17	96400-18
BioPharm silicone (platinum-cured) 7.6 m (25 ft)/pk	<b>✓</b>	<b>✓</b>	✓	<b>✓</b>	<b>✓</b>		✓	96420	-13	96420-14	96420-16	96420-25	96420-17	96420-18
BioPharm Plus silicone (platinum-cured) 7.6 m (25 ft)/pk	<b>✓</b>	1	1	1	1		1	96440	-13	96440-14	96440-16	96440-25	96440-17	96440-18
C-Flex® ULTRA 7.6 m (25 ft)/pk	1	1	1	1	1	1	1	_		06434-14	06434-16	06434-25	06434-17	06434-18
<b>C-Flex®</b> 7.6 m (25 ft)/pk	/	1	1	1	1	1	1	06424	-13	06424-14	06424-16	06424-25	06424-17	06424-18
PharMed® BPT 7.6 m (25 ft)/pk	1	1	1	1	1	1	1	06508	-13	06508-14	06508-16	06508-25	06508-17	06508-18
PharMed® BPT High-Pressure 7.6 m (25 ft)/pk	<b>✓</b>	1	1	1	1	1	1	_		05664-14	05664-16	_	_	_
PharmaPure® 7.6 m (25 ft)/pk		1	1			1	1	06435	-13	06435-14	06435-16	06435-25	06435-17	06435-18
Chem-Durance® Bio 15.2 m (50 ft)/pk		1	1			1	1	06442	-13	06442-14	06442-16	06442-25	06442-17	06442-18
Tygon® E-LFL 7.6 m (25 ft)/pk	/	1	1	1	1	1	1	06440	-13	06440-14	06440-16	06440-25	06440-17	06440-18
<b>Tygon® E-Food (B-44-4X)</b> 15.2 m (50 ft)/pk	1	1	1	1	1		1	06418	-13	06418-14	06418-16	06418-25	06418-17	06418-18
<b>Tygon® E-Lab (E-3603)</b> 15.2 m (50 ft)/pk	/	1	1	1	1		1	06509	-13	06509-14	06509-16	06509-25	06509-17	06509-18
<b>Versilon™ 2001</b> 15.2 m (50 ft)/pk		1	1					06475	-13	06475-14	06475-16	06475-25	06475-17	06475-18
<b>Tygon® Fuel &amp; Lubricant (F-4040-A)</b> 15.2 m (50 ft)/pk	<b>✓</b>	1	1	1	1		1	06401	-13	06401-14	06401-16	06401-25	06401-17	06401-18
<b>Versilon™ (A-60-N)</b> 15.2 m (50 ft)/pk	<b>✓</b>	1	<b>/</b>	<b>/</b>	<b>/</b>			06404	-13	06404-14	06404-16	06404-25	06404-17	06404-18
<b>Tygon® (A-60-F)</b> 15.2 m (50 ft)/pk	1	1	1	1	/		1	06402	-13	06402-14	06402-16	06402-25	06402-17	06402-18
GORE® STA-PURE®, PCS 30.5 cm (12")/pk	<b>✓</b>	1	1			1	1	_		96211-14	96211-16	96211-25	96211-17	96211-18
GORE® STA-PURE®, PFL 30.5 cm (12")/pk	<b>/</b>	1	<b>✓</b>			<b>/</b>	<b>/</b>	_		96212-14	96212-16	96212-25	96212-17	96212-18
Viton® FDA-Compliant 7.6 m (25 ft)/pk	1	1	1	1	1		1	96412	-13	96412-14	96412-16	96412-25	96412-17	96412-18

 $<sup>^{\</sup>dagger\dagger}$  Sizes L/S 13 and L/S 14 are not compatible with Cytoflow pump head or thin-wall version of the High-Performance pump head.

 $<sup>^{\</sup>dagger}Determined under the following conditions: 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F).$ 

### **Masterflex**® L/S® High-Performance

 Our High-Performance Precision pump tubing features a thicker wall compared to our Precision pump tubing

### **Precision Pump Tubing**

 Ideal choice for applications involving pressure, suction lift, viscous fluids, or long tubing life

	L/S High-Performance	Precision pump tubing		
Pump tubing cross sections	L/S 15	L/S 24	L/S 35	L/S 36
Inside diameter (nominal)	4.8 mm (0.19")	6.4 mm (0.25")	7.9 mm (0.31")	9.7 mm (0.38")
Hose barb size	4.8 mm (3/16")	6.4 mm (1/4")	9.5 mm (3/8")	9.5 mm (¾")
Flow range (approximate)† with 1 to 600 rpm drive Value in ( ) obtained with High-Performance pump head	1.7 to 1000 mL/min (1.8 to 1100 mL/min)	2.8 to 1700 mL/min (3.0 to 1800 mL/min)	3.8 to 2300 mL/min (4.3 to 2600 mL/min)	4.8 to 2900 mL/min (5.8 to 3400 mL/min)
Maximum pressure‡	2.7 bar	(40 psig)	2.4 bar (35 psig)	1.4 bar (20 psig)
Maximum vacuum‡	660 mm H	lg (26" Hg)	660 mm Hg (26" Hg)	610 mm Hg (24" Hg)
Suction lift‡	8.8 m H <sub>2</sub> 0	(29 ft H <sub>2</sub> 0)	8.8 m H <sub>2</sub> O (29 ft H <sub>2</sub> O)	8.3 m H <sub>2</sub> O (27 ft H <sub>2</sub> O)

 $<sup>^{\</sup>dagger}Determined under the following conditions: 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F).$ 

 $<sup>\</sup>mbox{\sc $^{$+}$}$  Actual performance varies depending on tubing formulation—values shown are for firm tubing.

			L/S Pum						
	Signature	O. 100 (1987)	,080®	1007.4. (Sa)	High (400)	8			
Tubing	Z Z	\ \( \xi_{\hat{\hat{\hat{\hat{\hat{\hat{\hat	\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	11/10/0	L/S 15	L/S 24	L/S 35	L/S 36
Puri-Flex® 7.6 m (25 ft)/pk	1	<b>✓</b>	1	1	1	96419-15	96419-24	96419-35	96419-36
Silicone (platinum-cured) 7.6 m (25 ft)/pk	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	96410-15	96410-24	96410-35	96410-36
Silicone (peroxide-cured) 7.6 m (25 ft)/pk	1	✓	<b>√</b>	1	1	96400-15	96400-24	96400-35	96400-36
BioPharm silicone (platinum-cured) 7.6 m (25 ft)/pk	<b>✓</b>	<b>√</b>	✓	<b>✓</b>	✓	96420-15	96420-24	96420-35	96420-36
BioPharm Plus silicone (platinum-cured) 7.6 m (25 ft)/pk	✓	✓	✓	✓	✓	96440-15	96440-24	96440-35	96440-36
C-Flex® ULTRA 7.6 m (25 ft)/pk	1	<b>✓</b>	<b>✓</b>	<b>✓</b>	1	06434-15	06434-24	06434-35	06434-36
<b>C-Flex®</b> 7.6 m (25 ft)/pk	1	<b>✓</b>	1	<b>/</b>	<b>/</b>	06424-15	06424-24	06424-35	06424-36
PharMed® BPT 7.6 m (25 ft)/pk	1	1	1	1	1	06508-15	06508-24	06508-35	06508-36
PharMed® BPT High-Pressure 7.6 m (25 ft)/pk	1	1	1	1	<b>/</b>	05664-15	05664-24	_	_
PharmaPure® 7.6 m (25 ft)/pk		<b>✓</b>	1			06435-15	06435-24	_	_
Chem-Durance® Bio 15.2 m (50 ft)/pk		<b>/</b>	1			06442-15	06442-24	06442-35	06442-36
Tygon® E-LFL 7.6 m (25 ft)/pk	1	1	1	1	<b>✓</b>	06440-15	06440-24	06440-35	06440-36
<b>Tygon® E-Food (B-44-4X)</b> 15.2 m (50 ft)/pk		1	<b>/</b>	<b>/</b>	<b>✓</b>	06418-15	06418-24	06418-35	06418-36
<b>Tygon® E-Lab (E-3603)</b> 15.2 m (50 ft)/pk	1	<b>✓</b>	1	<b>✓</b>	1	06509-15	06509-24	06509-35	06509-36
<b>Versilon™ 2001</b> 15.2 m (50 ft)/pk		<b>✓</b>	1			06475-15	06475-24	_	_
Tygon® Fuel & Lubricant (F-4040-A) 15.2 m (50 ft)/pk	1	✓	<b>√</b>	<b>√</b>	1	06401-15	06401-24	06401-35	06401-36
<b>Versilon™ (A-60-N)</b> 15.2 m (50 ft)/pk	1	<b>✓</b>	<b>✓</b>	<b>✓</b>	1	06404-15	06404-24	06404-35	06404-36
<b>Tygon® (A-60-F)</b> 15.2 m (50 ft)/pk	1	1	1	1	1	06402-15	06402-24	06402-35	06402-36
GORE® STA-PURE®, PCS 35.6 cm (14")/pk	1	1	1		1	96211-15	96211-24	96211-35	96211-36
GORE® STA-PURE®, PFL 35.6 cm (14")/pk	1	1	1		1	96212-15	96212-24	96212-35	96212-36
<b>Viton® FDA-Compliant</b> 7.6 m (25 ft)/pk	1	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>/</b>	96412-15	96412-24	96412-35	96412-36

### **Masterflex**® I/P® Precision and

- $\,$  I/P pump tubing is manufactured to extremely close tolerances that match our I/P pump heads, ensuring accurate, repeatable flow and long tubing life
- Our tubing is factory-tested and optically inspected to provide the best performance from your peristaltic pump

### **High-Performance Precision Pump Tubing**

 Our High-Performance Precision pump tubing features a thicker wall compared to our Precision pump tubing, making it the best choice for applications involving pressure, suction lift, viscous fluids, or long tubing life

	I/P Precision pu	ımp tubing		I/P High-Performance Pred	cision pump tubing	
Pump tubing cross sections	0	0	0	0	0	O
	I/P 26	I/P 73	I/P 82	I/P 70	I/P 88	I/P 89
Inside diameter (nominal)	6.4 mm (0.25")	9.5 mm (0.37")	12.7 mm (0.5")	9.5 mm (0.37")	12.7 mm (0.5")	15.88 mm (0.62")
Hose barb size (nominal)	6.4 mm (1/4")	9.5 mm (%")	12.7 mm (½")	9.5 mm (3/8")	12.7 mm (½")	15.88 mm (5/8")
Flow range (approximate) <sup>†</sup> with 1 to 650 rpm drive		o 4 LPM o 1.1 GPM)	0.02 to 13 LPM (0.005 to 3.5 GPM)	0.01 to 8 LPM (0.002 to 2.1 GPM)	0.02 to 17 LPM (0.005 to 4.5 GPM)	0.03 to 19 LPM (0.007 to 5.0 GPM)
Maximum pressure‡	2.7 ba	r (40 psi)	1.4 bar (20 psi)	2.7 bar (40 psi)	2.4 bar (35 psi)	1.4 bar (20 psi)
		H. (00   H.)	E10 mm Hg (20" Hg)	660 mm /	(Hg 26" Hg)	610 mm Hg (24" Hg)
Maximum vacuum†	660 mm	Hg (26" Hg)	510 mm Hg (20" Hg)	000 111111 (	rig 20 rig)	010 111111119 (24 119)

 $<sup>^{\</sup>dagger}Determined under the following conditions: 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F).$ 

‡Actual performance varies depending on tubing formulation—values shown are for firm tubing.

, ,	,	<u> </u>	/@ <i>Q</i>	/ <sub>®</sub> / I/P	Pump Head (	Compatibility	High High	I/P Pump Hea	nd Compatibility	]	
Tubing	Sag		000 / 500 O	I/P 26	I/P 73	I/P 82		Length	I/P 70	I/P 88	I/P 89
Puri-Flex® 7.6 m (25 ft)/pk	<b>/</b>	./	./	96419-26	96419-73	96419-82	<b>✓</b>	3.0 m (10 ft)/pk	96419-70	96419-88	96419-89
Silicone	1	1	1	96410-26	96410-73	96410-82	/	3.0 m (10 ft)/pk	96510-70	96510-88	96510-89
Silicone (peroxide-cured) 7.6 m (25 ft)/pk	1	1	1	96400-26	96400-73	96400-82		_	_	_	_
BioPharm silicone (platinum-cured) 7.6 m (25 ft)/pk	1	<b>✓</b>	1	96420-26	96420-73	96420-82	✓	3.0 m (10 ft)/pk	96421-70	96421-88	96421-89
BioPharm Plus silicone (platinum-cured) 7.6 m (25 ft)/pk	<b>√</b>	<b>✓</b>	✓	96440-26	96440-73	96440-82	✓	3.0 m (10 ft)/pk	96441-70	96441-88	96441-89
C-Flex® ULTRA 7.6 m (25 ft)/pk	/	1	1	06434-26	06434-73	06434-82	/	_	_	_	_
C-Flex® 7.6 m (25 ft)/pk	/	/	1	06424-26	06424-73	06424-82	/	3.0 m (10 ft)/pk	06424-70	06424-88	06424-89
PharMed® BPT 7.6 m (25 ft)/pk	1	1	1	06508-26	06508-73	06508-82	/	7.6 m (25 ft)/pk	06508-70	06508-88	_
PharmaPure® 7.6 m (25 ft)/pk		/	1	06435-26	06435-73	06435-82		_	_	_	_
Chem-Durance® Bio 15.2 m (50 ft)/pk		1	1	06442-26	06442-73	06442-82	/	15.2 m (50 ft)/pk	06442-70	06442-88	06442-89
Tygon® E-LFL 7.6 m (25 ft)/pk	1	1	1	06440-26	06440-73	06440-82	/	7.6 m (25 ft)/pk	06440-70	06440-88	06440-89
<b>Tygon® E-Food (B-44-4X)</b> 15.2 m (50 ft)/pk	1	1	1	06418-26	06418-73	06418-82	/	15.2 m (50 ft)/pk	06418-70	06418-88	06418-89
Tygon <sup>®</sup> E-Lab (E-3603) 15.2 m (50 ft)/pk	1	1	1	06509-26	06509-73	06509-82	/	15.2 m (50 ft)/pk	06509-70	06509-88	06509-89
Versilon™ 2001 15.2 m (50 ft)/pk		/	1	06475-26	06475-73	06475-82		_	_	_	_
Tygon® Fuel & Lubricant (F-4040-A) 15.2 m (50 ft)/pk	✓	<b>√</b>	1	_	06401-73	06401-82		_	_	_	_
Versilon™ (A-60-N) 15.2 m (50 ft)/pk	<b>√</b>	<b>√</b>	1	06404-26	06404-73	06404-82	✓	7.6 m (25 ft)/pk	06404-70	06404-88	06404-89
<b>Tygon® (A-60-F)</b> 15.2 m (50 ft)/pk	<b>√</b>	1	1	06402-26	06402-73	06402-82	/	7.6 m (25 ft)/pk	_	06402-88	06402-89
Series PCS 61 cm (24")/pk	1	1	1	96211-26	96211-73	96211-82	/	61.0 cm (24")/pk	_	96211-88	96211-89
Series PFL 61 cm (24")/pk	1	1	1	96212-26	96212-73	96212-82	/	61.0 cm (24")/pk	_	96212-88	96212-89
Viton® FDA-Compliant 7.6 m (25 ft)/pk	1	1	1	96412-26	96412-73	_		_	_	_	_

### **Spooled Pump Tubing**

- Eliminate waste by cutting the exact length to fit your application
- Cost-effective, efficient, and convenient
- Always have enough tubing on hand
- Save space and shipping costs





	•		•				
Size		ired silicone 510-series)		red silicone -series)	PharMed® BPT (06508-series)		
	m (ft) Cat. no		m (ft) Cat. no.		m (ft)	Cat. no.	
L/S 13	152.4 (500)	96403-13	76.2 (250)	96407-13	_	_	
L/S 14	152.4 (500)	96403-14	76.2 (250)	96407-14	152.4 (500)	95687-14	
L/S 16	152.4 (500)	96403-16	76.2 (250)	96407-16	152.4 (500)	95687-16	
L/S 25	152.4 (500)	96403-25	76.2 (250)	96407-25	_	_	
L/S 17	152.4 (500)	96403-17	76.2 (250)	96407-17	152.4 (500)	95687-17	
L/S 18	121.9 (400)	96403-18	61.0 (200)	96407-18	121.9 (400)	95687-18	
L/S 15	121.9 (400)	96403-15	76.2 (250)	96407-15	121.9 (400)	95687-15	
L/S 24	91.4 (300)	96403-24	61.0 (200)	96407-24	91.4 (300)	95687-24	
L/S 35	91.4 (300)	96403-35	_	_	91.4 (300)	95687-35	
L/S 36	30.5 (100)	96403-36	_	_	30.5 (100)	95687-36	

#### I/P Spooled Pump Tubing

I/P 26	61.0 (200)	96403-26	_	_	61.0 (200)	_
I/P 73	45.7 (150)	96403-73	45.7 (150)	96402-73	45.7 (150)	95687-73
I/P 82	30.5 (100)	96403-82	30.5 (100)	96402-82	30.5 (100)	95687-82
I/P 88	_	_	_	_	_	_
I/P 89		_	_	_	_	_

#### L/S Spooled Pump Tubing

Size		n silicone 421-series)	C-Flex® (06424-series)			
	m (ft)	Cat. no.	m (ft)	Cat. no.		
L/S 13	_	_	121.9 (400)	06427-13		
L/S 14	121.9 (400)	96423-14	121.9 (400)	06427-14		
L/S 16	121.9 (400)	96423-16	121.9 (400)	06427-16		
L/S 25	121.9 (400)	96423-25	121.9 (400)	06427-25		
L/S 17	121.9 (400)	96423-17	121.9 (400)	06427-17		
L/S 18	121.9 (400)	96423-18	121.9 (400)	06427-18		
L/S 15	121.9 (400)	96423-15	121.9 (400)	06427-15		
L/S 24	121.9 (400)	96423-24	121.9 (400)	06427-24		
L/S 35	_	_	121.9 (400)	06427-35		
L/S 36	_	_	121.9 (400)	06427-36		

#### I/P Spooled Pump Tubing

I/P 26	121.9 (400)	96423-26	121.9 (400)	06427-26
I/P 73	30.5 (100)	96423-73	30.5 (100)	06427-73
I/P 82	_	_	30.5 (100)	06427-82
I/P 88	30.5 (100)	96423-88	_	_
I/P 89	30.5 (100)	96423-89	_	_



### **Bulk-Packed Pump Tubing**

- Tubing coils are individually bagged and sealed to prevent contamination
- Save on shipping costs and reduce storage space
- Up to 20 sealed bags of tubing (depending on tubing size) in each case

#### Order above right

#### L/S Bulk-Packed Pump Tubing

Size	Number of 7.6-m (25-ft) bags per box	Platinum-cured silicone (96410-series)	C-Flex® (06424-series)
	bays per box	Cat. no.	Cat. no.
L/S 13	20	96404-13	06436-13
L/S 14	20	96404-14	06436-14
L/S 16	20	96404-16	_
L/S 25	20	96404-25	06436-25
L/S 17	20	96404-17	06436-17
L/S 18	10	96404-18	_
L/S 15	20	96404-15	06436-15
L/S 24	20	96404-24	06436-24
L/S 35	10	96404-35	06436-35
L/S 36	10	96404-36	06436-36

#### I/P Bulk-Packed Pump Tubing

I/P 26	10	96404-26	06436-26
I/P 73	10	96404-73	06436-73
I/P 82	10	96404-82	06436-82

### Sanitary Pump Tubing Assemblies

- Meets stringent demands of biotechnology, pharmaceutical, and the food, beverage, and dairy processing industries
- Smooth, pre-molded tubing ends allow quick connection to an adapter or to another length of sanitary tubing
- Connectors help maintain cleanliness and purity of your fluids
- FREE Certificate of resin or elastomer Compliance is available upon request

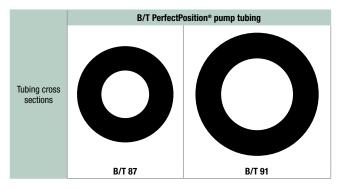


0:	Platinum-cu (96410, 965		PharMed <sup>®</sup> BPT (06508-series)			
Size	1.5 m (5 ft )	3 m (10 ft)	1.5 m (5 ft)	3 m (10 ft)		
	Cat. no.	Cat. no.	Cat. no.	Cat. no.		
L/S Prec	ision sanitary pum	tubing				
L/S 13	96100-13	96101-13	96112-13	96113-13		
L/S 14	96100-14	96101-14	96112-14	96113-14		
L/S 16	96100-16	96101-16	96112-16	96113-16		
L/S 25	96100-25	96101-25	96112-25	96113-25		
L/S 17	96100-17	96101-17	96112-17	96113-17		
L/S 18	96100-18	96101-18	96112-18	96113-18		
L/S High	-Performance Prec	ision sanitary pum <sub>l</sub>	tubing			
L/S 15	96100-15	96101-15	96112-15	96113-15		
L/S 24	96100-24	96101-24	96112-24	96113-24		
L/S 35	_	_	96112-35	96113-35		
L/S 36	_	_	96112-36	96113-36		
I/P Preci	ision sanitary pump	tubing				
I/P 26	96100-26	96101-26	96112-26	96113-26		
I/P 73	96100-73	96101-73	96112-73	96113-73		
I/P 82	96100-82	96101-82	96112-82	96113-82		
I/P High-	-Performance Preci	sion sanitary pump	tubing			
I/P 70	_	_	96112-70	96113-70		
I/P 88	_	_	96112-88 96113-8			

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# PerfectPosition® Pump Tubing for 77110- and 77111-Series B/T® Rapid-Load® Pump Heads

- Ensure optimal performance from your Masterflex pump
- PerfectPosition tubing retention marks indicate the exact placement of tubing in the pump head to provide the best performance and life of the tubing
- Custom extruded to fit 77110-series and 77111-series Masterflex B/T pumps and pump heads
- Engineered for long life in peristaltic pump applications



Dump tubing size	PerfectPosition® pump tubing					
Pump tubing size	B/T 87	B/T 91				
Inside diameter (nominal)	12.7 mm (0.5")	19.0 mm (0.75")				
Hose barb size	12.7 mm (½")	19.0 mm (¾")				
Flow range (approximate)†	0.65 to 18.9 LPM	1.4 to 42 LPM				
with 12 to 321 rpm drive	(0.16 to 5.0 GPM)	(0.3 to 11.1 GPM)				
Maximum pressure‡	2.4 bar (35 psi)	2.06 bar (30 psi)				
Maximum vacuum‡	660 mm Hg (26" Hg)					
Suction lift‡	8.8 m H <sub>2</sub> O (29 ft H <sub>2</sub> O)					

<sup>†</sup>Determined under the following conditions: 0 psi at inlet, 0.5 psi at outlet; water temperature at (22°C) 72°F . <sup>‡</sup>Actual performance varies depending on tubing formulation—values shown are for firm tubing.

D b.bine forms	lation.	B/T PerfectPosition pump tubing			
Pump tubing formu	iation	B/T 87	B/T 91		
Puri-Flex®	3.0 m (10 ft) per pack	96419-87	96419-91		
Silicone (platinum-cured)	3.0 m (10 ft) per pack	96510-87	96510-91		
Silicone (peroxide-cured)	3.0 m (10 ft) per pack	96400-87	96400-91		
BioPharm Plus silicone (platinum-cured)	3.0 m (10 ft) per pack	96445-87	96445-91		
C-Flex®	3.0 m (10 ft) per pack	06424-87	06424-91		
PharMed® BPT	3.0 m (10 ft) per pack	06507-87	06507-91		
PharmaPure®	3.0 m (10 ft) per pack	06437-87	06437-91		
Chem-Durance® Bio	3.0 m (10 ft) per pack	06443-87	06443-91		
Tygon® E-LFL	3.0 m (10 ft) per pack	06440-87	06440-91		
Tygon® E-Food (B-44-4X)	3.0 m (10 ft) per pack	06418-87	06418-91		
GORE® STA-PURE®, Series PCS	68.6 cm (27") per pack	96211-87	96211-91		
<b>Tygon® (A-60-F)</b> 3.0 m (10 per pact		06399-87	06399-91		

#### **Chemical Compatibility Charts**

Determine the right tubing formulation for your application using the chemical compatibility tables on pages 26–27. These tables are for use with all Masterflex and Ismatec tubing sizes. All ratings in the tables indicate tubing condition after exposure to the chemical at 21°C (70°F). As every application for our tubing is different and may be outside of our testing parameters, we still recommend using the Masterflex tubing test kit to determine the tubing's specific compatibility to your purposes.

#### **Ratings & Materials Legend**

#### **Ratings**

- A: No effect; little noticeable change
- B: Minor effect; slight corrosion or discoloration
- C: Moderate effect; not recommended for continuous use; softening, loss of strength, swelling and/or shrinkage
- Severe effect; not recommended for use; severe softening, swelling and/or shrinkage
- No data available

#### **Tubing formulations**

- PN: Puri-Flex®, Puri-Prene™, PharMed® BPT, High-Pressure PharMed® BPT, PharmaPure®, Versilon™ A-60-N, Tygon® A-60-F
- CF: C-Flex® ULTRA and C-Flex®
- S: Silicone (platinum-/peroxide-cured), BioPharm, BioPharm Plus, GORE® STA-PURE® Pump Tubing Series PCS
- T: Puri-Clear® LL, Tygon® E-LFL, Tygon® E-Food, Tygon® E-Lab
- TU: Tygon® Fuel & Lubricant, Solva®
- TC: Versilon™ 2001
- CD: Chem-Durance® Bio
- PFL: GORE® STA-PURE® Pump Tubing Series PFL
- V: Viton®
- FP: Polytetrafluoroethylene (PTFE)

#### **Technical Info**

#### **Tubing Test Procedure**

- 1. Measure and weigh a sample of tubing.
- 2. Immerse the sample in the fluid for 72 hours in a closed vessel.
- Dry sample, then measure and weigh it. Inspect carefully for signs of deterioration such as swelling, embrittlement, cracking, softness, or change of size or weight.
- If there is no sign of deterioration, test a sample in pump under the conditions of your application.

**Note:** PharmaPure\* and Chem-Durance\* Bio tubing formulations have different inner and outer materials and require modified testing methods. Contact your Masterflex office or dealer for chemical testing instructions.

#### **A**Caution

The ratings in the charts do not reflect the extent to which extraction or leaching may occur or the extent to which fluids may undergo any physical changes in properties or composition as a result of coming into contact with the wetted materials. it is the user's responsibility to test and ensure the suitability of wetted materials for all intended users, including establishing the compatibility of any fluid with the material through which it is coming into contact.

#### **AWarning**

The information in these tables has been supplied to Masterflex by the tubing manufacturers and is to be used **ONLY** as a guide to select your tubing. Test fluids and tubing using the tubing test procedure above. Masterflex does not warrant (neither express or implied) that the information in these tables is accurate or complete or that any material is suitable for any purpose.

### **▲** Danger

Even if tubing passes the immersion test, variations in temperature, pressure, or concentration may cause tubing failure.

#### SERIOUS INJURY MAY RESULT.

Use suitable guards and/or personal protection when pumping chemicals.

### Masterflex @ and Ismatec @ Chemical Compatibility

Fluid Tubing formulation										
	PN	CF	S	Ţ	TU	TC	CD	PFL	V	FP
Acetaldehyde Acetate LMW	D A	A	B	D D	D D	D C	C	A	D	A
Acetic acid <5%	A	A	Α	A	A	В	A	Α	_	A
Acetic acid >5%	Α	A	A	В	A	В	A	A	В	Α
Acetic anhydride Acetone	A D	B	C	D D	D D	A C	A B	A	D D	A
Acetonitrile	В	A	_	D	D	В	В	<u>~</u>	D	A
Acetyl bromide	C	Α	_	D	D	C	D	<del>-</del>	<del>-</del>	Α
Acetyl chloride Air	C A	A	C	D A	D A	C A	D A	A	A	A A <sup>†</sup>
Aliphatic hydrocarbons	D	D	_	D	B	D	D	_	_	
Aluminum chloride	Α	Α	В	Α	Α	Α	Α		Α	Α
Aluminum sulfate Alums	A	A	A	A	A	A	A	_	A	A
Ammonia, gas / liquid	A	A	C	B	B	B	B		D	A
Ammonium acetate	Α	Α	_	Α	Α	Α	Α	Α	D	Α
Ammonium carbonate	A	A	C	A	A	A	A	A	A	A
Ammonium chloride Ammonium hydroxide	A	A	C A	A B	C	A	A	A	A B	A
Ammonium nitrate	Α	Α	С	Α	A	Α	Α	Α	Α	Α
Ammonium phosphate	A	Α	A	A	Α	Α	Α	Α	A	Α
Ammonium sulfate Amyl acetate	A B	A D	A D	A D	A D	A D	A D	A B	A D	A
Amyl alcohol	D	D	D	D	A	Ā	Ā	A	Ā	Â
Amyl chloride	C	D	D	D	D	D	D	<u> </u>	Α	Α
Aniline Aniline hydrochloride	C	B B	D D	D D	D D	D D	D D	A	B B	A
Aqua regia		ט						A		
(80% HCI, 20% H)	D	_	D	D	D D	A D	A	-	В	Α
Aromatic hydrocarbons Arsenic salts	D A	D		D A	D A	D A	D A		A D	
Barium salts	A	Α	Α	A	A	A	A	Α	A	Α
Benzaldehyde	D	D	В	D	D	C	С	Α	D	Α
Benzenesulfonic acid	D	A	D	D	D	D	D	Α	Α	Α
Bleaching liquors Boric acid	A	B A	B A	A	A	A	A		A	A
Bromine	D	Α	D	D	D	D	D		Α	Α
Butane	A	D	D	A D	A	В	В	В	A	A
Butanol (butyl alcohol) Butyl acetate	D B	B D	B D	D	A D	A D	A D	A B	A D	A
Butyric acid	В	A	D	D	C	D	D	A	В	A
Calcium oxide	A	<del>-</del>	A	A	A	A	A	-	A	A
Calcium salts Carbon bisulfide	A D	A D	B D	A D	A D	A D	A D	Α	Α	A
Carbon dioxide	A	A	В	A	A	A	A	Α	Α	Α <sup>†</sup>
Carbon tetrachloride	D	В	D	D	D	D	D	В	Α	A
Chlorine, dry Chlorine, wet	C	A	D D	A C	A	C	C	_	A B	A <sup>†</sup>
Chloroacetic acid	В	A	_	A	D	A	A	В	D	A
Chlorobenzene	D	D	D	D	D	D	D	Α	Α	В
Chlorobromomethane	В	D	D	D	D	_	D	_	A	A
Chloroform Chlorosulfonic acid	D	D A	D D	D D	D D	D D	D D	B	A D	A
Chromic acid, 30%	A	A	C	C	C	В	В	<u>~</u>	A	A
Chromium salts	A	Α	_	A	Α	A	A	_	_	_
Copper salts Cresol	A D	A D	A D	A B	A C	A	A		A	A
Cyclohexane	D	D	D	D	Č	Ď	Ď	B	A	A
Cyclohexanone	D	D	D	D	D	C	C	<u> </u>	D	Α
Diacetone alcohol Dimethyl formamide	A B	A B	B B	D D	D D	A	A	A	D D	A
Dimethyl Sulfoxide (DMSO)	A	_	_	_	_	_	_	_	_	A
Essential oils	D	В	C	D	С	D	D	-	_	_
Ethanol (ethyl alcohol)	C	В	A	D	В	A	A	A	A	A
Ether Ethyl acetate	C B	D D	D B	D D	C	D D	D D	B A	D D	A
Ethyl bromide	D	Α	D	D	D	С	D	<u> </u>	Α	Α
Ethyl chloride	C	A	D	D	D	D	D		A	Α
Ethylamine Ethylene chlorohydrin	D A	A	C	D D	D B	B A	B A	B	D A	
Ethylene dichloride	C	A	D	D	D	D	D	В	A	A
Ethylene glycol	A	В	Α	A	Α	A	A	Α	Α	A
Ethylene oxide Fatty acids	C	A B	D C	A B	A B	A C	C	B A	D A	A
Ferric chloride	A	A	В	A	A	A	A	_ A	A	A
Ferric sulfate	Α	Α	В	Α	Α	Α	Α	Α	Α	Α
Ferrous chloride	A	A	C	A	A	A	A	_	A	A
Ferrous sulfate Fluoboric acid	A D	A	A	A C	A D	A	A	A	A	A
Fluoroborate salts	Α	Α	_	Α	Α	Α	Α	<b> </b>	_	<u> </u>
Fluosilicic acid	C	A	D	A	A	A	A	_	A	A
Formaldehyde Formic acid, 25%	D A	A	B	D B	D C	C	C A	A	D D	A
Freon® TMS	D	C	_	D	D	A	A	D	—	A
Gasoline, high-aromatic	D	D	D	D	В	D	D	В	Α	В
Gasoline, nonaromatic	D	D	D	D	В	D	D	В	A	A
Glucose Glue, P.V.A.	A	A	A	A	A	A —	A	A	A	A
Glycerin	Α	В	A	Α	Α	Α	Α	<b>—</b>	Α	A
Hydriodic acid	D	A	_	A	A	A	A	-	A	_
Hydrobromic acid, 30% Hydrochloric acid (dil)	D A	A	D D	B A	A	A	A		A	A
Hydrochloric acid (med)	B	A	D	C	D	A	A	A	A	A
Hydrochloric acid (conc)		В	D	С	D	Α	Α	Α	Α	Α
	A	Α	C	Α	A	Α	A	Α	Α	Α
Hydrocyanic acid Hydrocyanic acid, gas, 10%	A	A	С	A	A	A	A		A	A

#### Charts (See Legend on page 25)

Cital to (See Legend	on p	ugo 2								
Eluid				Tub	ing fo	rmula	tion			
Fluid	PN	CF	S	Ţ	TU	TC	CD	PFL	٧	FP
Hydrofluoric acid, 75% Hydrogen peroxide (dil)	Α	A	D A	D A	D A	 A	C A	D A	D A	A
Hydrogen peroxide, 90% Hypochlorous acid	B A	D A	B D	D A	D A	B A	B A	A	A	A
lodine solutions lodoform	A	C	C	A	A	Α_	A D		A C	A
Kerosene	D	D	D	D	В	D	D	Α	A	Α
Ketones Lacquer solvents	D B	B D	 D	D D	D D	C	C		 D	A
Lactic acid, 3–10% Lead acetate	A	A A	A D	A A	A A	A A	A A	Α	A D	A A
Linseed oil	С	D	Α	D	Α	B	В	A	Α	Α
Lithium hydroxide Magnesium chloride	B	A	D A	A	A	 A	B A		C A	A
Magnesium sulfate	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α
Malic acid Manganese salts	A	A A	B B	A	A	A	A	A —	A	A
Mercury salts Methane	A	A D		A	A	A	A	В	A	A A <sup>†</sup>
Methanol (methyl alcohol)	Α	_	Α	С	С	Α	Α	Α	В	Α
Methyl chloride Methyl ethyl ketone (MEK)	D	A	D D	D D	D D	D C	D C	B	B D	A
Mixed acid (40% H <sub>2</sub> SO <sub>4</sub> , 15% HNO <sub>3</sub> )	В	_	_	В	D	_	Α	_	_	A
Molybdenum disulfide	_	A	_	_	_	_	A		A	_
Monoethanolamine Naphtha	C D	B D	B D	D D	D B	D D	D D	В	D A	A B
Natural gas Nickel salts	A	D A	A	A	A	A	A	B A	A	A <sup>†</sup>
Nitric acid (dil)	A	A	B	A	D D	A	A	A	B	A
Nitric acid (med) Nitric acid (conc)	D	=	D	D	D	Α	Α	Α	Α	Α
Nitrobenzene Nitrogen oxides	D A	D A	D D	D A	D A	D A	D A	A	B D	A A
Nitrous acid	A C	A B	— В	A D	C B	A B	A B	_		A
Oils, animal Oils, mineral	D	В	В	С	Α	D	D		Α	A
Oils, vegetable Oleic acid	C	B A	B D	D D	A B	B D	B	A	A B	A
Oxalic acid, cold	B	A	B B	C A	D A	A	A	A	A B	A A <sup>†</sup>
Oxygen, gas Palmitic acid, 100% in ether	C	_	D	D	В	C	C	Α	Α	A
Perchloric acid Perchloroethylene	C	A B	D D	C D	D D	A D	A D	A B	A	A
Phenol (carbolic acid) Phosphoric acid, 50%	A	D A	D C	B C	C A	A A	A	A A	A A	A A
Phthalic acid	Α	D	В	D	Α	Α	Α	_	В	Α
Plating solutions Polyglycol	A B	A B	D A	A A	D A	A —	A B		A A	A —
Potassium carbonate Potassium chlorate	A B	A A	<u>—</u> В	A B	A	A	A	A	A A	_
Potassium hydroxide (med)	A	A	В	B	D D		A	В	D D	A
Potassium hydroxide (conc) Potassium iodide	Α	A	_ C	Α	Α	Α	Α	_	Α	A
Propanol (propyl alcohol) Pyridine	C		A D	D D	A D	C	C	A	A D	A
Silicone fluids Silicone oils	A C	B B	C	B B	A	B B	A		A	A
Silver nitrate	Α	Α	Α	Α	Α	Α	Α	A	Α	Α
Soap solutions Sodium bicarbonate	B A	A	A	A	A	A	A	A	A	A
Sodium bisulfate Sodium bisulfite	A A	A A	 A	A A	A A	Α	A A	A A	A A	A
Sodium borate	Α	Α	Α	Α	Α		Α	_	Α	Α
Sodium carbonate Sodium chlorate	A	A A	A C	A	A A	A	A	A —	A A	A
Sodium chloride Sodium ferrocyanide	A	A	A	A B	A B	A	A	A	A	A
Sodium hydrosulfite	B	A	_ A	A	A D	_ A	A		A	A
Sodium hydroxide (dil) Sodium hydroxide, 25%	A	В	В	С	D	Α	Α	—	Α	Α
Sodium hydroxide (conc) Sodium hypochlorite, <5%		C A	<u>—</u> В	C A	D A	A	A		A	A
Sodium hypochlorite, >5% Sodium nitrate	A A	A A	B D	A A						
Sodium silicate	Α	Α	Α	Α	Α		Α	Α	Α	Α
Sodium sulfide Sodium sulfite	A	A A	A	A A	A	A A	A	A	A	A A
Steam, up to 40 psi Stearic acid	C		A B	D A	D B		D	A	B A	A <sup>†</sup>
Styrene	D	D	D	D	D	D	D	Α	Α	A
Sulfuric acid (dil) Sulfuric acid (med)	A	A	D D	A	A B	A	A	A	A	A
Sulfuric acid (conc) Sulfurous acid	D A	A A	D D	D A	D A	D A	A		A B	A
Tannic acid	B	A B	В	С	D A	A	A	_	A	A
Tanning liquors Tartaric acid	Α	Α	A	A A	Α	Α	Α	A	A	Α
Tin salts Toluene (toluol)	A D	A D	B D	A D	A D	A D	A D		 A	A
Trichloroacetic acid	В	Α	D	Α	D	Α	Α	_	С	Α
Trichloroethylene Trisodium phosphate	D A	D A	D —	D A	D A	D A	D A	B —	A	A
Turpentine Urea	D A	D A	D B	D A	B A	D A	D A	A	A	A
Uric acid Water, fresh	A	A	<u>—</u> В	A	C	A	A	A A	_ A	A
Water, salt	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α
Xylene Zinc chloride	D A	D A	D A	D A	D A	D A	D A	A	A A	A
Do not use the L/S® PTF										

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