

# MASTERFLEX<sup>®</sup>

## L/S<sup>®</sup> PUMP TUBING



## ENSURE OPTIMAL PERFORMANCE FROM YOUR MASTERFLEX PUMP

- Precision extruded to meet tight tolerances
- Factory tested and optically inspected
- Engineered to comply with numerous standards and classifications
- Different formulations and sizes accommodate a wide range of applications in numerous markets

To ensure accurate flow rates and long tubing life, use only Masterflex tubing in your pump applications—accept no substitutes! 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. Masterflex tubing will help you achieve top performance from your fluid transfer system.








### CONSIDER THE FOLLOWING WHEN CHOOSING TUBING:

- **Flow Rate:** Tubing size directly affects flow rate—make sure the size is appropriate for your flow requirements
- **Chemical Compatibility:** Ensure tubing formulation is compatible with the fluid you will pump. Use the helpful compatibility charts at [ColeParmer.com/mflexchem](http://ColeParmer.com/mflexchem)
- **Tubing Life:** All Masterflex tubing is formulated for optimal performance in Masterflex pumps. See detailed tubing life and graph information at [ColeParmer.com/masterflex](http://ColeParmer.com/masterflex)
- **Fluid Characteristics:** Viscosity, solids, back pressure, and suction lift all affect tubing performance and selection. For applications influenced by these variables, High-Performance Precision tubing typically works best
- **Temperature:** Choose a formulation that meets your temperature needs—refer to the following pages for specifications

 **Cole-Parmer<sup>®</sup>**  
fluid handling and analysis

Distributed by: Fiedler Scientific Instruments, s.r.o.  
[info@lab-eu.com](mailto:info@lab-eu.com) [info@pristroje.cz](mailto:info@pristroje.cz)








# Masterflex Tubing Formulations

Pump tubing formulation	Advantages	Application suitability†							Meets classifications	Gas permeability	Sterilization
		Acids	Alkalies	Organic solvents	Pressure	Vacuum	Viscous fluids	Sterile fluids			
 <p><b>Silicone (platinum-cured)</b></p>	<p>Excellent biocompatibility. No leachable additives, DOP, or plasticizers; phthalate and latex-free; odorless and nontoxic, fungus-resistant. No taste imparted to transported fluids. Weather, ozone, corona, and radiation resistant. Minimal tendency to take a set. Translucent, clear to light amber.</p>	N/R	N/R	N/R	F	G	F	E	<p>USP Class V Extractables Exceeds Class VI Implant European Pharmacopoeia (EP 3.1.9) FDA 21 CFR 177.2600; FDA 21 CFR 210 and 211; Exceeds 3A sanitary cGMPs; REACH (non-DEHP) compliant RoHS compliant ADCF compliant</p>	<p>CO<sub>2</sub>: 20,132 H<sub>2</sub>: 6579 O<sub>2</sub>: 7961 N<sub>2</sub>: 2763</p>	<p>Sterilize by EtO, autoclave, or gamma radiation.</p>
 <p><b>Silicone (peroxide-cured)</b></p>	<p>Excellent biocompatibility. No additives, plasticizers or DOP; odorless and nontoxic, fungus-resistant. No taste imparted to transported fluids. Weather, ozone, corona, and radiation resistant. Minimal tendency to take a set. Translucent, clear to light amber.</p>	N/R	N/R	N/R	F	G	F	E	<p>USP Class VI European Pharmacopoeia (EP 3.1.9) FDA 21 CFR 177.2600 Exceeds 3A sanitary standards REACH (non-DEHP) compliant RoHS compliant ADCF compliant</p>	<p>CO<sub>2</sub>: 20,132 H<sub>2</sub>: 6579 O<sub>2</sub>: 7961 N<sub>2</sub>: 2763</p>	<p>Sterilize by EtO or autoclave.</p>
 <p><b>BioPharm Silicone (platinum-cured)</b></p>	<p>Ultra-smooth inner surface minimizes particle entrapment. Lower absorption; excellent biocompatibility; no leachable additive, DOP, or plasticizers. 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.</p>	N/R	N/R	N/R	F	G	F	E	<p>USP Class VI European Pharmacopoeia (EP 3.1.9) FDA 21 CFR 177.2600 Exceeds 3A sanitary standards REACH (non-DEHP) compliant RoHS compliant</p>	<p>CO<sub>2</sub>: 25,147 H<sub>2</sub>: — O<sub>2</sub>: 4715 N<sub>2</sub>: 2284</p>	<p>Sterilize by EtO, autoclave, or gamma radiation.</p>
 <p><b>BioPharm Plus Silicone (platinum-cured)</b></p>	<p>Similar to BioPharm Silicone, plus: Longest life of any silicone pump tubing. Lower spallation than regular silicone. Enhanced pressure capability. Fungus-resistant. Nontoxic, no leachable plasticizers. Lower gas permeability than other silicones. Translucent, clear to light amber.</p>	N/R	N/R	N/R	F	G	F	E	<p>USP Class VI European Pharmacopoeia (EP 3.1.9) FDA 21 CFR 177.2600 Exceeds 3A sanitary standards REACH (non-DEHP) compliant RoHS compliant</p>	<p>CO<sub>2</sub>: 25,147 H<sub>2</sub>: — O<sub>2</sub>: 4715 N<sub>2</sub>: 2284</p>	<p>Sterilize by EtO, autoclave, or gamma radiation.</p>
 <p><b>Puri-Flex™</b></p>	<p>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. No halogens or phthalates. Translucent, clear to light white.</p>	G	G	N/R	G	G	E	E	<p>USP Class VI FDA 21 CFR 177.2600 and 177.1810 REACH (non-DEHP) compliant RoHS compliant ADCF compliant</p>	<p>CO<sub>2</sub>: 1200 H<sub>2</sub>: — O<sub>2</sub>: 200 N<sub>2</sub>: 80</p>	<p>Sterilize by EtO, autoclave up to 135°C (275°F), gamma radiation up to 4.5 Mrad.</p>
 <p><b>C-Flex®</b></p>	<p>Physical properties similar to silicone with chemical compatibility of Tygon®. Inexpensive. Biocompatible. Heat sealable and weldable. Opaque, white.</p>	G	G	N/R	F	G	F	E	<p>USP Class VI European Pharmacopoeia (EP 3.2.9) REACH (non-DEHP) compliant RoHS compliant ADCF compliant</p>	<p>CO<sub>2</sub>: — H<sub>2</sub>: — O<sub>2</sub>: 150 N<sub>2</sub>: —</p>	<p>Sterilize by EtO, autoclave, or gamma radiation.</p>
 <p><b>C-Flex® ULTRA</b></p>	<p>Physical properties similar to silicone with chemical compatibility of Tygon®. Biocompatible. Heat sealable and weldable. Longer pump life and lower spallation than C-Flex. Translucent.</p>	G	G	N/R	F	G	F	E	<p>USP Class VI European Pharmacopoeia (EP 3.2.9) REACH (non-DEHP) compliant RoHS compliant ADCF compliant</p>	<p>CO<sub>2</sub>: 2.1 H<sub>2</sub>: — O<sub>2</sub>: 1.1 N<sub>2</sub>: 3.4</p>	<p>Sterilize by gamma radiation or one cycle of autoclave at 121°C (250°F), 1 bar (15 psi) for 30 minutes.</p>

†E = Excellent, G = Good, F = Fair, P = Poor, N/R = not recommended

Distributed by: **Fiedler Scientific Instruments, s.r.o.**  
[info@lab-eu.com](mailto:info@lab-eu.com) [info@pristroje.cz](mailto:info@pristroje.cz)

# Masterflex Tubing Formulations







Pump tubing formulation	Advantages	Application suitability†							Meets classifications	Gas permeability	Sterilization
		Acids	Alkalies	Organic solvents	Pressure	Vacuum	Viscous fluids	Sterile fluids			
<b>PharMed® BPT</b> 	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 protect light-sensitive fluids. Low gas permeability. High-pressure 10.3 bar (150 psi) version available. Opaque, beige	G	G	N/R	G	G	E	E	USP Class VI European Pharmacopoeia (EP 3.2.9) FDA 21 CFR 177.2600 NSF-51 REACH (non-DEHP) compliant RoHS compliant	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 radiation up to 2.5 Mrad.
<b>Solve-Flex®</b> 	Excellent chemical resistance, especially with solvents. Chemically inert. Low spallation. Nontoxic. Low coefficient of friction. Fluoropolymer-lined tubing. Opaque, white.	E	E	E	F	G	E	E	USP Class VI	—	Sterilize by EtO.
<b>PharmaPure®</b> 	Nontoxic and nonhemolytic (similar to PharMed® BPT); biocompatible. Long life even under pressure; up to 1000 hours at 2.7 bar (40 psi). Very low spallation—protects fluid purity. Low extractables. Low gas permeability. Opaque, off-white.	G	G	N/R	G	G	E	E	USP Class VI FDA 21 CFR 177.2600 European Pharmacopoeia (EP 3.2.9) REACH (non-DEHP) compliant RoHS Compliant	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 radiation up to 2.5 Mrad.
<b>Chem-Durance® Bio</b> 	Excellent chemical resistance. Excellent life and durability under pressure. Low spallation. Plasticizer-free inner liner. High dielectric constant. Excellent biocompatibility. Opaque, beige.	E	E	G	E	E	E	E	USP Class VI FDA 21 CFR 177.2600 REACH (non-DEHP) compliant RoHS Compliant	CO <sub>2</sub> : 745 H <sub>2</sub> : — O <sub>2</sub> : 200 N <sub>2</sub> : 80	Sterilize with ethylene oxide (EtO) radiation or autoclave.
<b>PTFE</b> 	Chemically inert. Excellent chemical resistance. Will not leach into or absorb out of fluid being pumped. Extremely low gas permeability. Nontoxic. Virtually nonporous. Low coefficient of friction. Translucent, white. Use exclusively in PTFE-tubing pump head.	E	E	E	G	G	E	G	USP Class VI REACH (non-DEHP) compliant RoHS compliant ADCF compliant	CO <sub>2</sub> : 6.8 H <sub>2</sub> : — O <sub>2</sub> : — N <sub>2</sub> : 1.0	Sterilize by EtO or autoclave.
<b>Tygon® E-LFL</b> 	Longest life of all Tygon® peristaltic tubing. Clear for easy flow monitoring. Broad chemical resistance. Nonaging, nonoxidizing. Low gas permeability. Smooth bore. Good for viscous fluids. High dielectric constant. Transparent, clear.	G	G	N/R	G	G	E	G	USP Class VI European Pharmacopoeia (EP 3.2.9) FDA 21 CFR 175.300 EU Food REACH (non-DEHP) compliant RoHS compliant ADCF compliant	CO <sub>2</sub> : 563 H <sub>2</sub> : — O <sub>2</sub> : 124 N <sub>2</sub> : 67	Sterilize by EtO or autoclave.
<b>Tygon® E-Food (B-44-4X)</b> 	Designed especially for handling food products. Bore is extremely smooth (better than most stainless steels) Nontoxic, will not affect taste or odor, and clear for CIP and flow verification. Excellent nonwetting properties permit flush cleaning and complete drainage. High dielectric constant. Transparent, clear.	G	G	N/R	G	G	E	F	FDA 21 CFR 175.300 EU Food NSF-51 REACH (non-DEHP) compliant RoHS compliant ADCF compliant Meets 3A sanitary standards	CO <sub>2</sub> : 270 H <sub>2</sub> : 97 O <sub>2</sub> : 60 N <sub>2</sub> : 30	Sterilize by EtO or autoclave.

†E = Excellent, G = Good, F = Fair, P = Poor, N/R = not recommended

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



# Masterflex Tubing Formulations

Pump tubing formulation	Advantages	Application suitability†							Meets classifications	Gas permeability	Sterilization
		Acids	Alkalies	Organic solvents	Pressure	Vacuum	Viscous fluids	Sterile fluids			
<b>Tygon® E-Lab (E-3603)</b> 	Inexpensive tubing for general laboratory applications. Clear for easy flow monitoring. Handles virtually all inorganic chemicals. Nonaging, nonoxidizing. Low gas permeability. Good for viscous fluids. High dielectric constant. Transparent, clear.	G	G	N/R	G	G	E	P	USP Class VI FDA 21 CFR 175.300 EU Food NSF-51 REACH (non-DEHP) compliant RoHS compliant ADCF compliant	CO <sub>2</sub> : 360 H <sub>2</sub> : 97 O <sub>2</sub> : 80 N <sub>2</sub> : 40	Sterilize by EtO or autoclave.
<b>Tygon® Chemical (2001)</b> 	Best chemical resistance of any Tygon® formulation. Compatible with many polar solvents. Plasticizer-free. Clear for easy flow monitoring. Low extractability. Low gas permeability. High dielectric constant. Transparent, clear.	E	E	G	G	G	E	G	FDA 21 CFR 175.300 REACH (non-DEHP) compliant RoHS compliant ADCF compliant	CO <sub>2</sub> : 114 H <sub>2</sub> : — O <sub>2</sub> : 19 N <sub>2</sub> : 9	Sterilize by EtO, autoclave, or gamma radiation.
<b>Tygon® Fuel &amp; Lubricant (F-4040-A)</b> 	Specially formulated to transport hydrocarbons, petroleum products, and distillates. Suitable for gasoline, kerosene, heating oils, cutting fluids, and glycol-based coolants. Minimum extractability. Low gas permeability. High dielectric constant. Transparent, yellow.	G	G	N/R	G	G	E	P	REACH (non-DEHP) compliant RoHS compliant ADCF compliant	CO <sub>2</sub> : 100 H <sub>2</sub> : 97 O <sub>2</sub> : 22 N <sub>2</sub> : 12	Sterilization is not recommended.
<b>Norprene® (A 60 G)</b> 	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.	G	G	N/R	E	E	E	N/R	NSF-51 REACH (non-DEHP) compliant RoHS compliant	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.
<b>Norprene® Food (A 60 F)</b> 	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.	G	G	N/R	E	E	E	G	FDA 21 CFR 177.2600 NSF-51 REACH (non-DEHP) compliant RoHS compliant	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.
<b>Viton®</b> 	Perfect for food and lab applications where FDA compliance is required. Excellent chemical resistance. Resistant to corrosives, solvents, and oils at elevated temperatures. Low gas permeability. Opaque, black.	E	E	Variable—test before using	G	G	G	F	FDA 21 CFR 177.2600 ADCF compliant	CO <sub>2</sub> : 76 to 79 H <sub>2</sub> : — O <sub>2</sub> : 13 to 15 N <sub>2</sub> : 4.3	Sterilization is not recommended.

†E = Excellent, G = Good, F = Fair, P = Poor, N/R = not recommended

## Masterflex Tubing Test Kit

Our FREE Tubing Test Kit is a simple way to test your chemicals against different tubing formulations. Kit contains samples of 19 different pump tubing formulations, formulation descriptions, a selection guide, instructions on how to test your tubing, and complete ordering information. Call today! Request item 00101-10.

Call or go online to request your FREE test kit today!







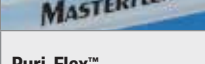


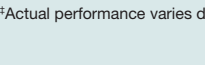


# L/S Precision Pump Tubing

## Ensure optimal performance from your Masterflex pump

- Custom extruded to fit Masterflex pumps
- Engineered for long life in peristaltic pump applications

Tubing size	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18
Inner 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 (1/16")	1.6 mm (1/16")	3.2 mm (1/8")	4.8 mm (3/16")	6.4 mm (1/4")	9.5 mm (3/8")
Flow range (approximate) <sup>†</sup>	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 <sup>‡</sup>	2.7 bar (40 psig)			2.4 bar (35 psig)	1.4 bar (20 psig)	1.0 bar (15 psig)
Maximum vacuum <sup>‡</sup>	660 mm Hg (26" Hg)			510 mm Hg (20" Hg)		
Suction lift <sup>‡</sup>	8.8 m H <sub>2</sub> O (29 ft H <sub>2</sub> O)			6.7 m H <sub>2</sub> O (22 ft H <sub>2</sub> O)		












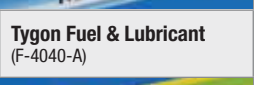



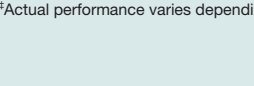
Pump tubing formulation	Compatible pump head						
<b>Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load<sup>®</sup></li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-96410-13</b> 7.6 m (25 ft)/pk	<b>MK-96410-14</b> 7.6 m (25 ft)/pk	<b>MK-96410-16</b> 7.6 m (25 ft)/pk	<b>MK-96410-25</b> 7.6 m (25 ft)/pk	<b>MK-96410-17</b> 7.6 m (25 ft)/pk	<b>MK-96410-18</b> 7.6 m (25 ft)/pk
<b>Silicone</b> (peroxide-cured) 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-96400-13</b> 7.6 m (25 ft)/pk	<b>MK-96400-14</b> 7.6 m (25 ft)/pk	<b>MK-96400-16</b> 7.6 m (25 ft)/pk	<b>MK-96400-25</b> 7.6 m (25 ft)/pk	<b>MK-96400-17</b> 7.6 m (25 ft)/pk	<b>MK-96400-18</b> 7.6 m (25 ft)/pk
<b>BioPharm Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-96420-13</b> 7.6 m (25 ft)/pk	<b>MK-96420-14</b> 7.6 m (25 ft)/pk	<b>MK-96420-16</b> 7.6 m (25 ft)/pk	<b>MK-96420-25</b> 7.6 m (25 ft)/pk	<b>MK-96420-17</b> 7.6 m (25 ft)/pk	<b>MK-96420-18</b> 7.6 m (25 ft)/pk
<b>BioPharm Plus Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-96440-13</b> 7.6 m (25 ft)/pk	<b>MK-96440-14</b> 7.6 m (25 ft)/pk	<b>MK-96440-16</b> 7.6 m (25 ft)/pk	<b>MK-96440-25</b> 7.6 m (25 ft)/pk	<b>MK-96440-17</b> 7.6 m (25 ft)/pk	<b>MK-96440-18</b> 7.6 m (25 ft)/pk
<b>Puri-Flex™</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-96419-13</b> 7.6 m (25 ft)/pk	<b>MK-96419-14</b> 7.6 m (25 ft)/pk	<b>MK-96419-16</b> 7.6 m (25 ft)/pk	<b>MK-96419-25</b> 7.6 m (25 ft)/pk	<b>MK-96419-17</b> 7.6 m (25 ft)/pk	<b>MK-96419-18</b> 7.6 m (25 ft)/pk
<b>C-Flex®</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-06424-13</b> 7.6 m (25 ft)/pk	<b>MK-06424-14</b> 7.6 m (25 ft)/pk	<b>MK-06424-16</b> 7.6 m (25 ft)/pk	<b>MK-06424-25</b> 7.6 m (25 ft)/pk	<b>MK-06424-17</b> 7.6 m (25 ft)/pk	<b>MK-06424-18</b> 7.6 m (25 ft)/pk
<b>C-Flex® ULTRA</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	—	<b>MK-06434-14</b> 7.6 m (25 ft)/pk	<b>MK-06434-16</b> 7.6 m (25 ft)/pk	<b>MK-06434-25</b> 7.6 m (25 ft)/pk	<b>MK-06434-17</b> 7.6 m (25 ft)/pk	<b>MK-06434-18</b> 7.6 m (25 ft)/pk
<b>PharMed® BPT</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-06508-13</b> 7.6 m (25 ft)/pk	<b>MK-06508-14</b> 7.6 m (25 ft)/pk	<b>MK-06508-16</b> 7.6 m (25 ft)/pk	<b>MK-06508-25</b> 7.6 m (25 ft)/pk	<b>MK-06508-17</b> 7.6 m (25 ft)/pk	<b>MK-06508-18</b> 7.6 m (25 ft)/pk
<b>Solve-Flex®</b> 	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> </ul>	—	—	—	—	<b>MK-96446-17</b> 3.6 m (12 ft)/pk	—

<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.

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

# L/S Precision Pump Tubing (continued)

Tubing size		L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18
Inner 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 (1/16")	1.6 mm (1/16")	3.2 mm (1/8")	4.8 mm (3/16")	6.4 mm (1/4")	9.5 mm (3/8")
Flow range (approximate) <sup>†</sup>		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 <sup>‡</sup>		2.7 bar (40 psig)			2.4 bar (35 psig)	1.4 bar (20 psig)	1.0 bar (15 psig)
Maximum vacuum <sup>‡</sup>		660 mm Hg (26" Hg)				510 mm Hg (20" Hg)	
Suction lift <sup>‡</sup>		8.8 m H <sub>2</sub> O (29 ft H <sub>2</sub> O)				6.7 m H <sub>2</sub> O (22 ft H <sub>2</sub> O)	
Pump tubing formulation	Compatible pump head						
<b>PharmaPure®</b> 	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> </ul>	<b>MK-06435-13</b> 7.6 m (25 ft)/pk	<b>MK-06435-14</b> 7.6 m (25 ft)/pk	<b>MK-06435-16</b> 7.6 m (25 ft)/pk	<b>MK-06435-25</b> 7.6 m (25 ft)/pk	<b>MK-06435-17</b> 7.6 m (25 ft)/pk	<b>MK-06435-18</b> 7.6 m (25 ft)/pk
<b>Chem-Durance® Bio</b> 	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> </ul>	<b>MK-06442-13</b> 15.2 m (50 ft)/pk	<b>MK-06442-14</b> 15.2 m (50 ft)/pk	<b>MK-06442-16</b> 15.2 m (50 ft)/pk	<b>MK-06442-25</b> 15.2 m (50 ft)/pk	<b>MK-06442-17</b> 15.2 m (50 ft)/pk	<b>MK-06442-18</b> 15.2 m (50 ft)/pk
<b>Tygon® E-LFL</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-06440-13</b> 7.6 m (25 ft)/pk	<b>MK-06440-14</b> 7.6 m (25 ft)/pk	<b>MK-06440-16</b> 7.6 m (25 ft)/pk	<b>MK-06440-25</b> 7.6 m (25 ft)/pk	<b>MK-06440-17</b> 7.6 m (25 ft)/pk	<b>MK-06440-18</b> 7.6 m (25 ft)/pk
<b>Tygon E-Food (B-44-4X)</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-06418-13</b> 15.2 m (50 ft)/pk	<b>MK-06418-14</b> 15.2 m (50 ft)/pk	<b>MK-06418-16</b> 15.2 m (50 ft)/pk	<b>MK-06418-25</b> 15.2 m (50 ft)/pk	<b>MK-06418-17</b> 15.2 m (50 ft)/pk	<b>MK-06418-18</b> 15.2 m (50 ft)/pk
<b>Tygon E-Lab (E-3603)</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-06509-13</b> 15.2 m (50 ft)/pk	<b>MK-06509-14</b> 15.2 m (50 ft)/pk	<b>MK-06509-16</b> 15.2 m (50 ft)/pk	<b>MK-06509-25</b> 15.2 m (50 ft)/pk	<b>MK-06509-17</b> 15.2 m (50 ft)/pk	<b>MK-06509-18</b> 15.2 m (50 ft)/pk
<b>Tygon Chemical (2001)</b> 	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> </ul>	<b>MK-06475-13</b> 15.2 m (50 ft)/pk	<b>MK-06475-14</b> 15.2 m (50 ft)/pk	<b>MK-06475-16</b> 15.2 m (50 ft)/pk	<b>MK-06475-25</b> 15.2 m (50 ft)/pk	<b>MK-06475-17</b> 15.2 m (50 ft)/pk	<b>MK-06475-18</b> 15.2 m (50 ft)/pk
<b>Tygon Fuel &amp; Lubricant (F-4040-A)</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-06401-13</b> 15.2 m (50 ft)/pk	<b>MK-06401-14</b> 15.2 m (50 ft)/pk	<b>MK-06401-16</b> 15.2 m (50 ft)/pk	<b>MK-06401-25</b> 15.2 m (50 ft)/pk	<b>MK-06401-17</b> 15.2 m (50 ft)/pk	<b>MK-06401-18</b> 15.2 m (50 ft)/pk
<b>Norprene® (A-60 G)</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-06404-13</b> 15.2 m (50 ft)/pk	<b>MK-06404-14</b> 15.2 m (50 ft)/pk	<b>MK-06404-16</b> 15.2 m (50 ft)/pk	<b>MK-06404-25</b> 15.2 m (50 ft)/pk	<b>MK-06404-17</b> 15.2 m (50 ft)/pk	<b>MK-06404-18</b> 15.2 m (50 ft)/pk
<b>Norprene Food (A 60 F)</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-06402-13</b> 15.2 m (50 ft)/pk	<b>MK-06402-14</b> 15.2 m (50 ft)/pk	<b>MK-06402-16</b> 15.2 m (50 ft)/pk	<b>MK-06402-25</b> 15.2 m (50 ft)/pk	<b>MK-06402-17</b> 15.2 m (50 ft)/pk	<b>MK-06402-18</b> 15.2 m (50 ft)/pk
<b>Viton®</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<b>MK-96412-13</b> 7.6 m (25 ft)/pk	<b>MK-96412-14</b> 7.6 m (25 ft)/pk	<b>MK-96412-16</b> 7.6 m (25 ft)/pk	<b>MK-96412-25</b> 7.6 m (25 ft)/pk	<b>MK-96412-17</b> 7.6 m (25 ft)/pk	<b>MK-96412-18</b> 7.6 m (25 ft)/pk

<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.










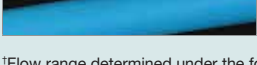
Distributed by: Fiedler Scientific Instruments, s.r.o.  
info@lab-eu.com info@pistroje.cz

# L/S High-Performance Precision Pump Tubing

## Thicker wall compared to our Precision pump tubing

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

Tubing size	L/S 15	L/S 24	L/S 35	L/S 36
Inner 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 (3/8")
Flow range (approximate) <sup>†</sup>	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 <sup>‡</sup>	2.7 bar (40 psig)		2.4 bar (35 psig)	1.4 bar (20 psig)
Maximum vacuum <sup>‡</sup>	660 mm Hg (26" Hg)			610 mm Hg (24" Hg)
Suction lift <sup>‡</sup>	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)













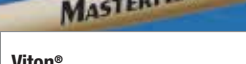
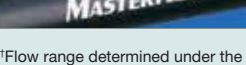
Pump tubing formulation	Compatible pump head				
<b>Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<b>MK-96410-15</b> 7.6 m (25 ft)/pk	<b>MK-96410-24</b> 7.6 m (25 ft)/pk	<b>MK-96410-35</b> 7.6 m (25 ft)/pk	<b>MK-96410-36</b> 7.6 m (25 ft)/pk
<b>Silicone</b> (peroxide-cured) 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<b>MK-96400-15</b> 7.6 m (25 ft)/pk	<b>MK-96400-24</b> 7.6 m (25 ft)/pk	<b>MK-96400-35</b> 7.6 m (25 ft)/pk	<b>MK-96400-36</b> 7.6 m (25 ft)/pk
<b>BioPharm Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<b>MK-96420-15</b> 7.6 m (25 ft)/pk	<b>MK-96420-24</b> 7.6 m (25 ft)/pk	<b>MK-96420-35</b> 7.6 m (25 ft)/pk	<b>MK-96420-36</b> 7.6 m (25 ft)/pk
<b>BioPharm Plus Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<b>MK-96440-15</b> 7.6 m (25 ft)/pk	<b>MK-96440-24</b> 7.6 m (25 ft)/pk	<b>MK-96440-35</b> 7.6 m (25 ft)/pk	<b>MK-96440-36</b> 7.6 m (25 ft)/pk
<b>Puri-Flex™</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<b>MK-96419-15</b> 7.6 m (25 ft)/pk	<b>MK-96419-24</b> 7.6 m (25 ft)/pk	<b>MK-96419-35</b> 7.6 m (25 ft)/pk	<b>MK-96419-36</b> 7.6 m (25 ft)/pk
<b>C-Flex®</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<b>MK-06424-15</b> 7.6 m (25 ft)/pk	<b>MK-06424-24</b> 7.6 m (25 ft)/pk	<b>MK-06424-35</b> 7.6 m (25 ft)/pk	<b>MK-06424-36</b> 7.6 m (25 ft)/pk
<b>C-Flex® ULTRA</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<b>MK-06434-15</b> 7.6 m (25 ft)/pk	<b>MK-06434-24</b> 7.6 m (25 ft)/pk	<b>MK-06434-35</b> 7.6 m (25 ft)/pk	<b>MK-06434-36</b> 7.6 m (25 ft)/pk
<b>PharMed® BPT</b> 	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<b>MK-06508-15</b> 7.6 m (25 ft)/pk	<b>MK-06508-24</b> 7.6 m (25 ft)/pk	<b>MK-06508-35</b> 7.6 m (25 ft)/pk	<b>MK-06508-36</b> 7.6 m (25 ft)/pk
<b>Solve-Flex®</b> 	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> </ul>	—	<b>MK-96446-24</b> 3.6 m (12 ft)/pk	—	—

<sup>†</sup>Flow range determined under the following conditions: Using a 1 to 600 rpm drive; 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F). Value given in ( ) is obtained with the High-Performance pump head.

<sup>‡</sup>Actual performance varies depending on tubing formulation—values shown are for firm tubing.

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

# L/S High-Performance Precision Pump Tubing (continued)

Tubing size		L/S 15	L/S 24	L/S 35	L/S 36
Inner 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 (3/8")
Flow range (approximate) <sup>†</sup>		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 <sup>‡</sup>		2.7 bar (40 psig)		2.4 bar (35 psig)	1.4 bar (20 psig)
Maximum vacuum <sup>‡</sup>		660 mm Hg (26" Hg)			610 mm Hg (24" Hg)
Suction lift <sup>‡</sup>		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)
Pump tubing formulation	Compatible pump head				
PharmaPure <sup>®</sup> 	✓ Easy-Load ✓ Easy-Load II	<b>MK-06435-15</b> 7.6 m (25 ft)/pk	<b>MK-06435-24</b> 7.6 m (25 ft)/pk	—	—
Chem-Durance <sup>®</sup> Bio 	✓ Easy-Load ✓ Easy-Load II	<b>MK-06442-15</b> 15.2 m (50 ft)/pk	<b>MK-06442-24</b> 15.2 m (50 ft)/pk	<b>MK-06442-35</b> 15.2 m (50 ft)/pk	<b>MK-06442-36</b> 15.2 m (50 ft)/pk
Tygon <sup>®</sup> E-LFL 	✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance	<b>MK-06440-15</b> 7.6 m (25 ft)/pk	<b>MK-06440-24</b> 7.6 m (25 ft)/pk	<b>MK-06440-35</b> 7.6 m (25 ft)/pk	<b>MK-06440-36</b> 7.6 m (25 ft)/pk
Tygon E-Food (B-44-4X) 	✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance	<b>MK-06418-15</b> 15.2 m (50 ft)/pk	<b>MK-06418-24</b> 15.2 m (50 ft)/pk	<b>MK-06418-35</b> 15.2 m (50 ft)/pk	<b>MK-06418-36</b> 15.2 m (50 ft)/pk
Tygon E-Lab (E-3603) 	✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance	<b>MK-06509-15</b> 15.2 m (50 ft)/pk	<b>MK-06509-24</b> 15.2 m (50 ft)/pk	<b>MK-06509-35</b> 15.2 m (50 ft)/pk	<b>MK-06509-36</b> 15.2 m (50 ft)/pk
Tygon Chemical (2001) 	✓ Easy-Load ✓ Easy-Load II	<b>MK-06475-15</b> 15.2 m (50 ft)/pk	<b>MK-06475-24</b> 15.2 m (50 ft)/pk	—	—
Tygon Fuel & Lubricant (F-4040-A) 	✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance	<b>MK-06401-15</b> 15.2 m (50 ft)/pk	<b>MK-06401-24</b> 15.2 m (50 ft)/pk	<b>MK-06401-35</b> 15.2 m (50 ft)/pk	<b>MK-06401-36</b> 15.2 m (50 ft)/pk
Norprene <sup>®</sup> (A-60 G) 	✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance	<b>MK-06404-15</b> 15.2 m (50 ft)/pk	<b>MK-06404-24</b> 15.2 m (50 ft)/pk	<b>MK-06404-35</b> 15.2 m (50 ft)/pk	<b>MK-06404-36</b> 15.2 m (50 ft)/pk
Norprene Food (A 60 F) 	✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance	<b>MK-06402-15</b> 15.2 m (50 ft)/pk	<b>MK-06402-24</b> 15.2 m (50 ft)/pk	<b>MK-06402-35</b> 15.2 m (50 ft)/pk	<b>MK-06402-36</b> 15.2 m (50 ft)/pk
Viton <sup>®</sup> 	✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance	<b>MK-96412-15</b> 7.6 m (25 ft)/pk	<b>MK-96412-24</b> 7.6 m (25 ft)/pk	<b>MK-96412-35</b> 7.6 m (25 ft)/pk	<b>MK-96412-36</b> 7.6 m (25 ft)/pk

<sup>†</sup>Flow range determined under the following conditions: Using a 1 to 600 rpm drive; 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F). Value given in ( ) is obtained with the High-Performance pump head.

<sup>‡</sup>Actual performance varies depending on tubing formulation—values shown are for firm tubing.