

Masterflex® Peristaltic Pumps and Fluid Handling Solutions

Superior accuracy and repeatability to ensure optimal performance



Setting science in motion to create a better world

WE ARE AVANTOR®

From discovery to delivery, Avantor is a global manufacturer and distributor of high-quality products, services and solutions to professionals in the life sciences and advanced technologies industries. We focus on the things that matter most to you, providing exceptional convenience, collaboration and customization to help ensure your success.

Our channel brand, VWR, part of Avantor, offers an integrated, seamless purchasing experience that is optimized for the way you do business. Through our global eCommerce platform, you can access our own brands as well as those from thousands of other manufacturers, so you can get exactly what you need to support your processes.

Avantor offers innovative fluid handling solutions with:



QUALITY & CHOICE

- Open architecture model integrated on pumps, tubing, fittings, sensors, bags and filters to meet your application needs
- Comprehensive Supplier Management Program with proprietary products as well as qualified first and second sources of key components
- Complete sterility validation program to mitigate risk



EXPERTISE

- Extensive fluid handling connectivity knowledge
 - Single-use facilities
 - Hybrid facilities
 - Conversion from self-assembled parts
- Collaborative approach to designing your solution



CONVENIENCE

- Local single-use experts
- Expedited design and approval process
 - Designs < 5 days
 - Validation Packs < 5 days
- Global logistics footprint
- 100+ standard products



CUSTOMIZATION

- Fully custom solutions designed for specific applications
- Ability to develop custom components and parts
- Customized skid systems with single-use fluid paths

Industries we serve

BIOPHARMA



RESEARCH & DEVELOPMENT



INDUSTRIAL & MANUFACTURING



FOOD AND BEVERAGE



ENVIRONMENTAL & SAFETY



ORIGINAL EQUIPMENT MANUFACTURERS



Dedicated to the success of your entire fluid path – from research to production

Peristaltic pumps

- Complete systems
- Pump drives
- Pump heads
- Panel mounts (OEM) and parts for engineers



Flow control

- Sanitary clamps
- Gaskets
- Pinch clamps
- Ratchet clamps
- Valves & stopcocks



Tubing

- Peristaltic pump tubing
- Transfer tubing
- Microbore tubing
- Tubing accessories



Fluid pumps

- Piston pumps
- Gear pumps
- Syringe pumps
- Pump accessories



Single-use sensors & accessories

- Single-use Flow Sensors
- Single-use Pressure Sensors
- Single-use Temperature Sensors



Flowmeters

- Flow controller
- Level sensors
- Flow indicators
- Flow switches



Fittings & Connectors

- Barbed
- Sanitary
- Quick disconnect
- Aseptic
- Luer
- Threaded
- Compression



Masterflex Peristaltic Pump Series — Choose by flow range



ISMATEC® MICROFLOW SERIES PERISTALTIC PUMPS

MICROFLOW, HIGH ACCURACY

- Precise control at your fingertips, in your lab or process
- Flow range: 0.0001 to 365 mL/min



L/S® SERIES PERISTALTIC PUMPS

VERSATILITY AND PRECISION

- Accurate and reliable pumps featuring easy-to-use connectivity and control
- Flow range: 0.00005 to 3400 mL/min



I/P® SERIES PERISTALTIC PUMPS

PROCESS PUMPING SOLUTIONS

- Powerful pumps built to last in challenging process and production environments
- Flow range: 0.0001 to 26 LPM



B/T® SERIES PERISTALTIC PUMPS

BULK TRANSFER AT ITS BEST

- Highest flow rate
- Flow range: 0.3 to 42 LPM, makes the job efficient

Selecting the right Masterflex Pump System

Define your application requirements

- What flow rate do I need?
- What chemical or media am I pumping?
- Do conditions like fluid viscosity, temperature, or back pressure play an important role in my application?
- What regulatory approvals are needed for the application?

Select a pump series based on your flow rate

- Ismatec flow range is 0.0001 to 365 mL/min
- L/S flow range is 0.00005 to 3400 mL/min
- I/P flow range is 0.001 to 26 LPM
- B/T flow range is 0.3 to 42 LPM

Select the components to fit your application

- I/P and L/S pumps systems are divided into three categories: pump head, tubing, and drive
- Masterflex Ismatec and B/T pumps systems are divided into two categories: pump and tubing
- To complete your tubing pump system, choose a pump head, tubing, and drive from within the same series

What to consider when choosing a pump head

- Flow rate — Different pump heads have different flow rate capabilities
- Frequency of tubing changes — Some pump heads enable very rapid tubing changes
- Desired number of channels — Ismatec series has pump models with up to 24 channels; in the L/S and I/P pump series several models of pump heads are stackable
- Chemical compatibility — If chemicals spill, the pump head materials become important. See our chemical compatibility table
- Accuracy — Standard pump heads deliver the most accurate and repeatable flow rates

What to consider when choosing tubing

You can visit our STAMP tubing selection guide or for a quick overview:

- Size — Inner and outer diameter of the tubing determine flow range, maximum pressure, and ability to handle viscous fluids well
- Temperature — Higher fluid or environmental temperatures will decrease tubing life
- Application — Special considerations for your application such as adherence to federal or other regulations such as USP Class VI, USP 788, REACh, RoHS, Animal Derived Statements, soft or hard particulates, or high viscosities are some examples
- Media — Which formulation is least effected by your fluid's chemical nature? Check out our Chemical Compatibility guide Database to help you find out. It is always best to trial the wetted path to determine impact of formulation and chemistries on media
- Pressure — Higher pressures can result in decreased pump tubing life and increased possibility of rupture. This can be mitigated with thicker tube walls in conjunction with a pump head architecture that supports those pressure ranges. Additionally, tube or barb locks to fit over tubing connectors will help reduce the risk of rupture at those points

What to consider when choosing a drive

- Flow rate — The rpm of the drive directly correlates to flow rate
- Fixed- or variable-speed — Variable-speed drives enable flow rate adjustment.
- Accuracy of flow rate or dispense volume — Many drives have digital speed control circuitry for highly accurate and repeatable flow rates
- Remote control via analog signal or cloud — Some drives can connect to your process controller or can be operated by a footswitch while others can be safely monitored using the cloud
- Environmental protection against hazards — Many drives are sealed against dust and water exposure

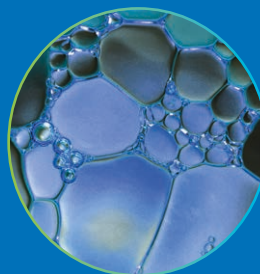
Complete your Masterflex pump system - Choose from 20+ tubing formulations to create the perfect pump for your process.



Non-contaminating, low shear, and noninvasive makes this pump perfect for Bio-pharma and healthcare.



Three-tier access and the ability to save and recall programs make your fluidic process secure and accurate.



Easily handles abrasive and corrosive fluids found in many chemical and mining applications.



Long life tubing prevents chemical leaks and elimination of vapor-lock, important for water treatment processes.

Masterflex[®] L/S[®] MasterSense[™] Drives

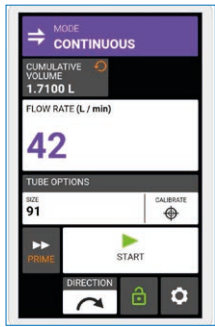
Reimagine Fluid Handling

Operate, collaborate and connect with ease.

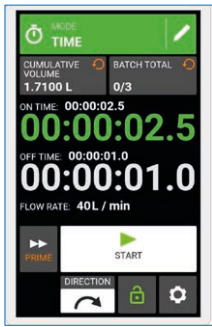


1. Over-the-air firmware updates let you take full advantage of future enhancements. MasterflexLive option gives you monitoring from anywhere.
2. Easy to read and operate touch screen - even while wearing gloves. Create, save, and recall pump programs via intuitive menus.
3. EtherNet/IP, Profibus, Wi-Fi, and analog remote I/O means connectivity and control options that suit your needs.
4. Powerful performance in a small footprint. Variable flow up to 3400 mL/min (600 rpm). Brushless, maintenance-free motor provides $\pm 0.1\%$ speed control accuracy with 6000:1 turndown ratio.
5. Graphical indicator lets you know when loaded tubing is optimally calibrated. Choose from over 20 formulations and sizes of tubing.
6. Convenient open-head sensor and antidrip features. Accepts all L/S pump heads.
7. On indicator light tells you at a glance the pump is powered even in low-light environments.

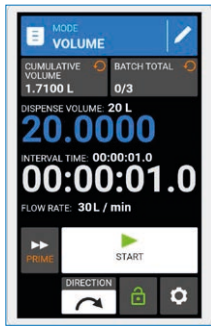
Features that make your process effortless.



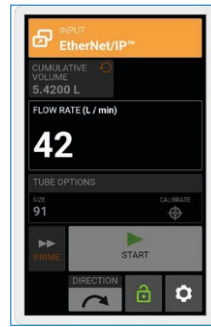
Continuous Mode



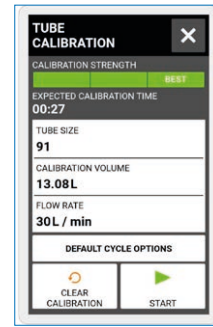
Time Mode



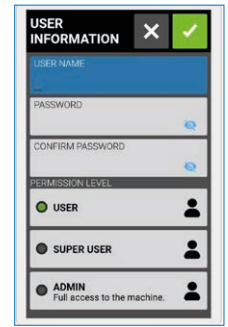
Volume Mode



Remote Mode



Tube Calibration



User Access

Skip reading the operation manual

Intuitive touch screen interface, even wearing gloves

- Easy to set up and program
- 5" capacitive TFT/RGB touch screen with a clear, wide viewing angle
- Adjust parameters with a simple touch—even with gloves on
- Operational modes include continuous run, volume dispense, and time dispense
- Batch control and interval/off time in Volume and Time modes
- Antidrip and speed ramping available in Volume mode—ensure accuracy and minimize sample loss
- Easily save and recall up to 50 commonly used protocols, each with a unique name
- Know when you hit your mark—graphical indicator lets you know when loaded tubing is optimally calibrated



Monitor your process remotely and stored programs securely

MASTERFLEXLIVE

- MasterflexLive is our secure, cloud-enabled platform for real-time remote monitoring of all Masterflex pump parameters
- Monitor critical processes running 24/7 without the need for onsite personnel
- Push notifications alert you to changes in operating conditions and error messages

FLEXIBLE CONNECTIVITY

- Your choice of connectivity options—MasterflexLive®, EtherNet/IP, or Profibus
- Three-tier access to pump functionality—use this option to protect your process by controlling who can operate the pump and at what level
- Over-the-air firmware updates—automatically allows you to take full advantage of future enhancements
- Internet connection via Wi-Fi or standard Ethernet (RJ45) jack on rear of drive

Choose the drive or complete pump that is right for you



	100 RPM (Up to 4 pump heads accepted)	600 RPM (up to 2 pump heads accepted)	600 RPM Easy-Load Complete System	600 RPM Easy-Load II Complete System
Flow Range	0.001 to 580 mL/min	0.006 to 3400 mL/min	0.08 to 480 mL/min	0.28 to 1700 mL/min
With EtherNet/IP and MasterflexLive	MLFX07526-20	MLFX07526-10	MLFX77920-40	MLFX77920-42
With Profibus and MasterflexLive	MLFX07526-22	MLFX07526-12	MLFX77920-50	MLFX77920-52

Drive Specifications

Agency Approvals	UL, cUL, CE
Warranty	2 Year
MasterflexLive	Real-time remote monitoring of all pump parameters. Push notifications alert you to operating conditions and error messages, allowing you to monitor critical pump processes 24/7—no need to be onsite.
EtherNet/IP or Profibus	Interface directly with either Ethernet/IP or Profibus based process control network(s) (using PLC, SCADA or similar); enables control of all pump parameters via network interface.
Speed control accuracy (resolution)	±0.1% (0.1 rpm at 600 rpm; 0.01 rpm at 100 rpm)
Reversible	Yes
Display	5" capacitive TFT/RGB touch screen with in-plane switching (wide viewing angle); 800 x 480 pixels
Digital Dispensing	Yes
External control - input	0 to 20 mA, 20 to 0 mA, 4 to 20 mA, 20 to 4 mA; 0 to 10 V, 10 to 0 V, 0 to 5 V, 5 to 0 V; start/stop, direction (CW/CCW), prime via contact closure
External control - output	0 to 20 mA, 20 to 0 mA, 4 to 20 mA, 20 to 4 mA; 0 to 10 V, 10 to 0 V, 0 to 5 V, 5 to 0 V; Tach output (open collector), Motor running, Open head, Local/Remote, General alarm
Motor	Brushless DC with encoder; continuous duty; reversible; 1/10 hp (75 W)
Open-head sensor	Yes; extension cable included
Housing materials	ABS plastic housing, painted aluminum chassis, painted aluminum bezel
Enclosure rating	IP33
Dimensions (L x W x H)	10-1/4" x 7-5/8" x 8-1/2" (26 x 19.4 x 21.6 cm)
Shipping weight	11 lb (5 kg)
Power	90 to 260 VAC, 50/60 Hz



Masterflex® L/S® Standard Digital Drives

Designed with maintenance-free high-accuracy motor and a graphical interface.



FEATURES

- Flow rate 0.00005 to 3400 mL/min with L/S tubing
- Digital interface with graphical LCD shows pump performance and operating modes
- Select your preferred language from the user-friendly menu for programming and operation
- Dispense by Volume in ml (0.001 to 9,999 mL), L, or gal; Copy—1 to 9,999 dispense cycles
- Anti-drip function ensures dispensing accuracy
- Brushless, maintenance-free motor offers $\pm 0.1\%$ speed control accuracy with a 6000 to 1 turndown ratio

Masterflex® I/P® Digital Network-Compatible Pump Systems

Networking drives offer either native EtherNet/IP™ or Profibus communication—no additional hardware or firmware required.



FEATURES

- Flow rate 0.0001 to 26 LPM with I/P tubing
- Digital interface with graphical LCD shows pump performance and operating mode
- Remote control available using analog communication—voltage, current and contact closure
- Select your preferred language from the user-friendly menu for programming and operation
- Dispense by Volume in ml (0.001 to 9,999 mL), L, or gal; Copy—1 to 9,999 dispense cycles
- Brushless, maintenance-free motor offers $\pm 0.1\%$ speed control accuracy with a 6000 to 1 turndown ratio
- Stainless steel 316 housing with NEMA 4X (IP66) rated for washdown
- Designed with open head sensor technology for enhanced user safety
- Advanced network and communication models feature either EtherNet/IP™ or Profibus communication



Masterflex[®] B/T[®] MasterSense[™] BioPharma Process Pump

High-flow pump for process applications – with an intuitive touch-screen interface and advanced connectivity.

FEATURES

- Powerful pump engineered for continuous-duty biopharma process applications
- 316 stainless steel housing is IP66 rated for use in washdown environments
- 5" (12.7 cm) capacitive TFT/RGB touch screen for crisp resolution and a wide viewing angle
- Adjust parameters with a simple touch, even while wearing gloves
- Over-the-air firmware updates let you take full advantage of future improvements in pump features and functionality
- Options for connectivity and monitoring include MasterflexLive[®], EtherNet/IP[™], Profibus, or analog signal
- Three-level user access gives you the option of controlling who can operate the pump and at what level
- Pump lets you save and retrieve commonly used operating programs for rapid setup and changeover
- Continuous run, volume dispense, and time dispense modes -- batch control and interval/off time in Volume and Time modes



Peristaltic Pump Heads

Masterflex Standard, Easy-Load®, Easy-Load® II, and High-Performance pump heads will all deliver excellent performance in dispensing applications.



MASTERFLEX® L/S® EASY-LOAD® II PUMP HEADS

FOR HIGH-PERFORMANCE & PRECISION TUBING

Automatic retention holds tubing securely in place with no manual adjustment—just load the tubing and start the pump.

- New design and automatic tubing retention allow for multiple tubing sizes—change tubing without removing head from drive
- Four-roller rotor improves pressure performance and mechanical stability while reducing pulsation
- Model available with integrated open-head sensor—connects directly to sensor-equipped drives
- Pump heads are stackable for multichannel applications
- Compact design for efficient use of space

Application

Suitable for use with L/S® High-Performance Precision pump tubing sizes.



MASTERFLEX® L/S® EASY-LOAD® PUMP HEADS

FOR FAST TUBING CHANGES IN MULTIPLE SIZES

Save time with fast tubing changes and reduced maintenance.

- New design and automatic tubing retention allow for multiple tubing sizes—change tubing without removing head from drive
- Rotor is constructed of stainless steel (SS) for enhanced durability
- Pump heads are stackable for multichannel applications
- Compact design for efficient use of space

Application

Suitable for use with L/S® Precision pump tubing sizes.



MASTERFLEX® ULTRAPHARM™ L/S® PUMP HEADS

DESIGNED TO BE USED IN THE FILL/FINISH STEP

Every drop counts—integrate into automated filling systems for high accuracy dosing and dispensing.

- Offset rollers and planetary gearing ensure dosing accuracy ($\pm 0.5\%$), low pulsation, and long tubing life
- Masterflex double-Y tube sets ensure proper retention, repeatability, and accuracy
- 250 rpm max speed; dosing volumes from <0.5 ml to >500 mL
- Easy on tubing—planetary drive rollers reduce drag on tubing for longer tubing life and reduced risk of premature tubing failure
- Whisper quiet operation reduces extra noise on the floor or in the lab
- Autoclavable pump head; tested to 10 cycles without any loss of flow or accuracy performance
- Pump head is available in either an aluminum body version or a 316 stainless steel body version

Application

- Downstream process and fill/finish applications
- Biopharma fill/finish for drug and vaccine production
- High accuracy ($\pm 0.5\%$) dosing and dispensing
- Pumping applications in cleanrooms or similar environments
- Sanitary/sterile fluid dosing and dispensing



MASTERFLEX® L/S® CYTOFLOW™ PUMP HEADS

DEVELOPED SPECIFICALLY FOR PUMPING DELICATE LIVE CELLS AND SHEAR-SENSITIVE FLUIDS

The best option for pumping live cells and shear-sensitive fluids—validated by independent test data.

- Convex-roller design is gentler on live cells and shear-sensitive fluids—validated by independent test data
- Large-diameter rotor delivers higher flow rates at lower speeds
- Ensure the survival and vitality of live cells
- Flow rate 0.03 to 5700 ml/min with L/S tubing—flow rate depends on the drive rpm, pump head, and tubing size
- Compatible with all Masterflex L/S drives that accept two or more pump heads
- Models available for Masterflex L/S Precision and L/S High-Performance precision pump tubing
- 2-roller and 3-roller pump heads available--choose 2-roller for maximum flow, 3-roller for less pulsation



MASTERFLEX® L/S® PTFE-DIAPHRAGM PUMP HEADS

WITH MOUNTING TOOLS, COUPLING HARDWARE, AND SERVICE KIT

Compatible with most Masterflex® L/S® drives.

- PTFE and glass wetted parts help maintain fluid purity
- Ideal for pumping through filters or into pressurized systems
- Check valve on inlet side of pump holds prime for up to two hours when pump is off



MASTERFLEX® L/S® RIGID PTFE-TUBING PUMP HEAD

FOR APPLICATIONS SUCH AS FILTRATION, CHEMICAL INJECTION, OR HIGH-PURITY SAMPLING

Ideal for applications such as filtration, chemical injection, or high-purity sampling.

- PTFE tubing is the only wetted part ensuring fluid purity and excellent chemical compatibility
- Delivers a wide range of flow rates at pressures up to 100 psi (6.9 bar)
- Six-roller pump head with adjustable occlusion—tighten occlusion for higher pressure, loosen for longer tubing life



MASTERFLEX® ISMATEC® REGLO INDEPENDENT CHANNEL CONTROL (ICC) PERISTALTIC PUMPS

EXPANDING YOUR BENCHTOP PUMPING CAPABILITIES WITH A SINGLE COMPACT UNIT

Independently control flow and direction of each channel using our patented technology via keypad or your PC.

- Flow rate 0.001 to 43 ml/min per channel - flow rate depends on drive rpm, rollers, and tubing size
 - USB interface for quick connection to a PC
 - Flexibility of bidirectional flow in each channel
 - Up to four independently controllable channels
 - Continuous pumping or precision dispensing
 - Enhanced accuracy through separate channel calibration
- Independent Channel Design



MASTERFLEX® ISMATEC® REGLO DIGITAL PISTON PUMP SYSTEMS WITH MASTERFLEXLIVE®

FOR FLUID TRANSFER, DISPENSING, AND AUTOMATED PROCESSES

Achieve high pressure, accuracy, and repeatability—with an intuitive touch-screen interface.

- MasterflexLive® is a secure, cloud-enabled platform for monitoring Masterflex pumps
- Compact, benchtop pumps optimize ease of use, accuracy, and reliability
- 5" (12.7 cm) capacitive TFT/RGB touch screen features crisp resolution and a wide viewing angle
- Flexible operational control via screen or analog remote control
- Continuous run, volume dispense, and time dispense modes
- Pump allows for saving and retrieving commonly used dispense programs for rapid set up
- Anti-drip and speed ramping available in volume dispense mode
- Valveless piston pump head is low maintenance and has fewer piston seizures or clogs
- Pump head features a single moving part for less drift over time
- Three-level user access – gives you the option of controlling who can operate the pump and at what level



MASTERFLEX® ISMATEC® REGLO DIGITAL GEAR PUMP DRIVES WITH MASTERFLEXLIVE®

GET REAL-TIME NOTIFICATIONS OF PUMP PARAMETERS

Achieve high pressure and accurate, pulseless flow -- with an intuitive touch-screen interface.

- Compact, benchtop pumps optimize ease of use, accuracy, and reliability
- Compatible with Micropump A-mount and B-mount style gear pump heads for flow ranges from 1.7 to 4680 ml/min
- 5" (12.7 cm) capacitive TFT/RGB touch screen for crisp resolution and a wide viewing angle
- Flexible operational control via screen or analog remote control
- Continuous run, volume dispense, and time dispense modes -- batch control and interval/off time in Volume and Time modes
- Pump lets you save and retrieve commonly used dispense programs for rapid set up
- Speed ramping available in Volume dispense mode – ensure accuracy and minimize sample loss
- Three-level user access – gives you the option of controlling who can operate the pump and at what level



MASTERFLEX® ISMATEC® IPC AND IPC-N DIGITAL MULTICHANNEL PERISTALTIC PUMPS

SMOOTH, PRECISE FLOW AND FEWER TUBING CHANGES

- Planetary drive with 8 stainless steel rotors reduces pulsation, increases flow rate accuracy, and lengthens tubing life
- Four-digit LED display facilitates repeatability
- Control pump via 6-button keypad or analog and TTL external signals
- Automatic occlusion cartridges are easy to use and provide reproducible results



MASTERFLEX® ISMATEC® REGLO DIGITAL MINIFLEX PUMPS

GET REAL-TIME NOTIFICATIONS OF PUMP PARAMETERS

Versatile pumps for accurate low-flow fluid delivery – with an intuitive touch-screen interface.

- Compact, benchtop pumps optimize ease of use, accuracy, and reliability
- 5" (12.7 cm) capacitive TFT/RGB touch screen for crisp resolution and a wide viewing angle
- Flexible operational control via screen or analog remote control
- Continuous run, volume dispense, and time dispense modes -- batch control and interval/off time in Volume and Time modes
- Pump lets you save and retrieve commonly used dispense programs for rapid set up
- Anti-drip and speed ramping available in Volume dispense mode – ensure accuracy and minimize sample loss
- Miniflex pump head accepts continuous tubing for clean, uninterrupted fluid paths
- Three-level user access

Masterflex® Peristaltic Pump Tubing

Precision extruded & pump tested formulations engineered to provide the highest quality for tubing life, pressure, and suction lift.

Select pump tubing series



Ismatec Tubing



Masterflex L/S Tubing



Masterflex I/P Tubing



Masterflex B/T Tubing



Pump Tubing Formulations



Silicone (platinum-cured)

The biopharmaceutical industry standard.



BioPharm Silicone (platinum-cured)

Absorption, excellent biocompatibility.



BioPharm Plus Silicone (platinum cured)

Ultra-smooth, very low extractable, longest tubing life.



Puri-flex

Superior pump life and biocompatibility. Stock guarantee.



PharmaPure

Nontoxic and not hemolytic.



PharMed BPT

Trusted for peristaltic and pharmaceutical applications.



Chem-Durance Bio

Excellent chemical resistance, pump life and biocompatibility.



Viton® FDA-Compliant

Ideal for required FDA compliance and superior chemical compatibility.



Versilon™ A-60-N

Well-suited for vacuum/pressure applications.



Gore® STA-PURE® PCS-Series

Enables long production cycles, reduce risk of rupture.



Gore® STA-PURE® PFL-Series

Performs reliably with common organic solvents.



Tygon® E-LFL/ Tygon® E-Food/ Tygon® E-Lab/ Tygon® Fuel & Lubricant/ Versilon® 2001 (Tygon® Chemical)

Longest pump life of all Tygon formulation.

Request your Free test kit today!

MASTERFLEX[®]

part of avantor™

Masterflex, part of Avantor, is a leading, global fluidics manufacturer of proprietary products—with certifications to help you stay compliant—for your complete fluidic path. Along with our wide range of products, from pumps and tubing to flowmeters and single-use components, we are your consultant to help you optimize your full fluidics workflow from research to process. And, when one of our standard offerings won't fit your application, we can help you succeed with a custom-engineered OEM pump solution to meet your exact needs and budget.

Our products are known for their accuracy, durability, and ease-of-use. They can be seen in facilities around the world particularly in the pharmaceutical, biopharmaceutical, food & beverage, and chemicals industries. Avantor single-use products can also be used in any bioprocess and R&D industries where fluidics is required.

Contact our team today.