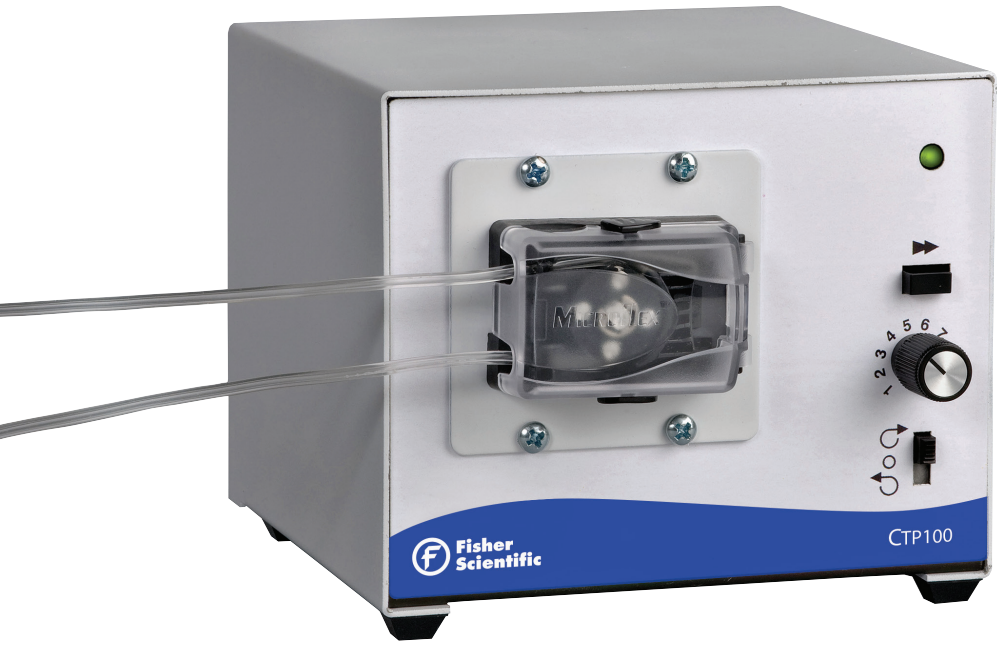
Fisherbrand™
QUALITY. RELIABILITY. VALUE.

Fluid Handling

A series of peristaltic pump systems and tubing

Peristaltic pump systems



Advantages

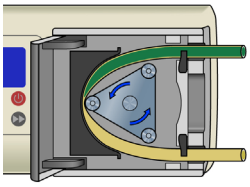
- Contamination free pumping—fluid contacts only the tubing or hose material
- High volumetric efficiency allows operation in metering or dosing applications where high accuracy is required
- Elimination of check valves prevents parts replacement and downtime
- Programmable, easy-to-use, low maintenance units
- Capable of running dry and pumping fluids with high quantities of entrained air, such as black liquor soap, sodium hypochlorite, or hydrogen peroxide
- Smooth inner tubing surfaces are easy to clean and prevent particle entrapment
- Tubing materials are available and comply with global pharmaceutical, sanitary and food standards (USP, EP, FDA and NSF)
- Elimination of priming requirements provides suction lift and self-priming capabilities up to 8m WC (26 ft H20)
- Handles fluids ranging from glycerine to molasses, latex to cell suspensions, and from slurries to corrosive fluids

The Fisherbrand advantage

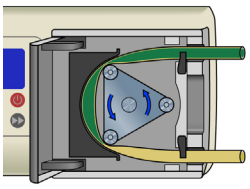
We are a leading supplier of peristaltic pump technology and a world-class innovator in fluid handling and flow control. We provide accurate, dependable tubing pump solutions throughout the world. These highly durable, accurate pumps have proven ideal for a wide variety of fluid handling applications—from laboratory and research to plant and production floor.

The Fisherbrand family of peristaltic pump systems offers superior performance with precision and ease-of-use. Designed to handle a wide range of fluids, from the highest purity to extremely caustic solutions, these pumps are used in a broad range of critical applications—from agriculture to chemical processing; and from beverage dispensing to semiconductor polishing.

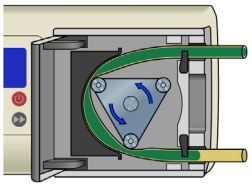
Principle of Operation



1
A pump head consists of only two parts: the rotor and the housing. The tubing is placed in the tubing bed—between the rotor and housing—where it is occluded (squeezed).



2
The rollers on the rotor move across the tubing, pushing the fluid. Tubing behind the rollers recovers its shape, creating a vacuum and drawing in fluid behind it.



3
A "pillow" of fluid is formed between the rollers. This is specific to the ID of the tubing and the geometry of the rotor. Flow rate is determined by multiplying speed by the size of the pillow. This pillow stays fairly constant except with extremely viscous fluids.

Benefits

The Fisherbrand series of peristaltic pumps provides a wide selection of models to meet many applications of fluid handling from lab to process scale-up. Some of these benefits include:

- A unique pump head that allows fast tube loading and minimises downtime
- Safety interlock powers down unit when changing tubing
- Robust design assures years of reliable service
- Integrated pump and drive systems are provided fully assembled reducing set-up time
- Compact housings conserve valuable space whether in the lab or on the process floor
- Intuitive controls and a simple menu available in seven languages (on DP2000 and MCP 3000 models)
- Integration with plant control systems allows automation of the fluid handling process
- Complies with stringent safety standards of UL, ETL, CE, C1 and with RoHS and WEEE directives

Markets/Applications

Ideal for a wide variety of life science and industrial applications:

- Sample prep
- General, media and reagent dispensing
- Filling
- Buffer recirculation
- Chromatography
- Fermenter recirculation
- Stem cell research
- Bio-reactor feed and chemistry control
- Cell culture
- Cell harvesting
- Spectroscopy
- Lab analysers
- Reagent metering applications
- Chemical feed
- Filtration
- Tangential-flow or cross-flow filtration
- Biopharmaceuticals
- Agrochemicals
- Oil analysis
- Sampling
- Pilot to process scale-up

Compact tubing pumps

Quality design in a compact package

Fisherbrand CTP100, CTP150, and CTP300 pumps offer enhanced and versatile performance in an ultra-compact, low-maintenance design. These highly innovative peristaltic pumps are ideal for meeting a wide range of fluid handling needs and provide long-term, reliable service.

These units are provided as complete pumping systems, consisting of a pump, motor, and control in a stackable steel housing. With standard flow ranges from 0.002mL/min to 105mL/min and pressures to 2.5 bar, these instrument-quality peristaltic pumps provide an ideal, cost-effective alternative to syringe pumps. A robust, fixed occlusion design allows for reliable, accurate pumping and dispensing with a wide variety of tubing materials and varying differential pressure applications.

Compact tubing pumps - Product benefits and features

Easy to maintain

- Simple, fast tubing changes
- Fixed occlusion eliminates adjustment after tubing changes and assures operation against pressure up to 30 PSIG

Easy to use

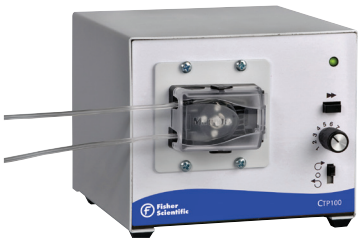
- Contamination free pumping—fluid contacts only the tubing material
- Controls are mounted on front panel with a separate single-turn speed control
- Flow direction switch with centre "OFF" position
- Green LED power "ON" indicator
- "Prime" button runs pump at maximum speed to rapidly prime or flush tubing
- Reversible pump direction permits purging of tubing prior to use

Diverse performance range

- Flow rates less than 2µL/min to 105mL/min
- Pressure up to 2.5 bar (30 PSIG)
- Accurate and repeatable flow delivery
- Address a wide range of critical applications with tubing materials that comply to USP class VI, FDA and NSF standards
- Accommodates all sizes and formulations of microbore flow rated tubing

Ergonomic design

- Space efficient—low profile, stackable design
- Remote capability—actuate unit with a foot switch or contact closure



CTP100

CTP150

CTP300

Specifications and ordering information

MODEL	CTP100	CTP100	CTP100	CTP150	CTP300
Cat. No	**15327527**	**15337527**	**15307537**	**15357547**	**15367547**
PERFORMANCE					
Number of channels	1	1	1	1	2
Flow capacity (mL/min)	0.002 to 1.65	0.017 to 11	0.07 to 50	0.8 to 105	0.8 to 14
RPM	1.2 to 10	13 to 80	50 to 300	20 to 100	20 to 100
ELECTRICAL					
Voltage (50/60 Hz)	90-130 or 160-260V AC (auto selected)				
Motor type	PMDC				
Control type	PWM (Pulse Width Modulated)				
PHYSICAL SPECIFICATIONS					
Operating temperature	0 to 40°C (32 to 104°F)				
Housing materials	Powder-coated steel				
IP rating	IP22				
Agency approvals	UL, cUL, CE, RoHS power supply				
Controller dimensions (L x W x H)	17.8 x 13.4 x 11.4 cm (7.0 x 5.25 x 4.5 in.)				
Shipping weight	1.5 kg (3.3 lb)				
Warranty	One year				

General purpose tubing pumps

Precision metering, worry-free performance

Fisherbrand GP1000 and GP1100 peristaltic pumps are ideal general-purpose tubing pumps for high-repeatability, precision metering, and worry-free performance in a variety of life science, industrial and process applications. The broad flow range capability of these units make them ideal for laboratory to pilot process scale-up requirements.

With the GP1000 and GP1100 units, our highly regarded peristaltic pump technology is combined with innovative digital control to provide robust performance at an economical value. These units offer a reliable alternative to lab piston metering pumps, gear pumps and small circulating pumps used in life science laboratory applications. These stackable, variable speed pumps are self priming, able to operate dry, and contain no valves or seals eliminating replacement needs. Fluid contacts only the tubing, providing for contamination-free pumping in high-purity applications.

General purpose tubing pumps — Product benefits and features

Easy to maintain

- Pump head enables rapid tubing changes
- Robust motor and drive system provides low-maintenance long-term operation
- Contamination free pumping—the fluid contacts only the tubing material

Easy to use

- Intuitive control keypad
- Stop and start from the front panel
- Easily increase/decrease flow through the membrane key-pad
- Universal voltage and frequency capability allows operation world-wide—IEC320 socket provided
- Reversible pump direction permits purging of tubing prior to use
- Quick start guide included for fast easy set-up

Diverse performance range

- Utilises various tubing sizes to provide a broad flow range
- Ability to pump against pressure up to 60 PSIG providing longer filtration cycles

Ergonomic design

- Space efficient—low-profile, stackable design
- Safety interlock powers unit down when changing tubing
- Remote control capability—ideal for automated process applications
- Accurate, reliable control of flow and dosing—digital display of RPM for accurate control

GP1000

GP1100

Specifications and ordering information

MODEL	GP1000 (thin wall)	GP1100 (thick wall)
Cat. No	**15377547**	**15387547**
PERFORMANCE		
Flow capacity (mL/min)	0.5 to 3,000	14 to 4,000
RPM	4 to 400	
Reversible	Yes	
External control - Input	4–20 mA; 0–10V; Remote/Local; Dir (CW/CCW); Start/Stop	
Pump open lockout or door sensor	Yes	
ELECTRICAL		
Voltage (AC) 60/50 (Hz)	90 to 130V AC or 200 to 260V AC; Single phase, auto-selected	
Current	1.6 A @ 115V; 1.9A @ 230V	
Motor type	PMDC	
Motor size	1/10 hp (75w)	
Display (rpm)	Seven-segment, 3-digit, Blue LED, 1 RPM resolution	
Speed regulation (accuracy)	± 0.25%	
PHYSICAL SPECIFICATIONS		
Housing and pump head construction	Housing: ABS; Pump head: GF Nylon, Delrin™, stainless steel, cold-rolled steel, Buna-N, polycarbonate)	
Agency approvals	ETL, cETL, CE, RoHS	
Operating temperature	0 to 40°C (32 to 104°F)	
Dimensions (L x W x H)	31.7 x 27.9 x 15.2 cm (12.5 x 11 x 6 in.)	
Shipping weight	7kg (15lb)	
Warranty	One year	

15397557 Handheld remote controller. DH120; for on/off control; route tubing through handle for filling applications.

Dispensing tubing pumps

Pump, dispense and fill—all with one unit

Fisherbrand DP2000 and DP2100 peristaltic pumps are specifically designed for critical metering and dispensing applications—you can pump, dispense and fill—all with one unit.

DP2000 and DP2100 peristaltic pumps are simple to set-up as dosing pumps, or dispensing systems by volume, time, or copy mode with a timed interval. The pump is also reversible, allowing for purging of transfer lines or emptying containers. These innovative systems provide a number of important advantages for users, including single-channel variable flow from 0.5 to 4000mL/min at a variable speed range of 4 to 400rpm. The powerful motor provides better than 0.25% percent speed control accuracy and repeatability as well as remote control operation.

Dispensing tubing pumps — Product benefits and features

Easy to maintain

- Pump head allows tubing change in less than 30 seconds
- Robust motor and drive system provides low-maintenance long-term operation
- Contamination free pumping—the fluid contacts only the tubing material

Easy to use

- Programmable in seven languages, provides easy set-up in almost any global location
- Universal voltage and frequency capability allows operation world-wide (IEC320 socket provided)
- Reversible pump direction permits purging of tubing prior to use
- Quick start guide included for fast, easy set-up

Diverse performance range

- Control capabilities include programmable dispensing by volume, time, or copy modes with a programmable delay between cycles for convenient, automated dispensing
- Each pump utilises various tubing sizes providing a broad flow range
- Able to pump against pressure up to 60 PSIG providing longer filtration cycles

Ergonomic design

- Optimises system accuracy by calibrating the pump system in process—the calibration is stored in memory—one calibration value per tubing size
- Safety interlock powers down unit when changing tubing

- Broad range of remote control options—ideal for automated process applications
- Space efficient—low-profile, stackable design
- Accurate, reliable control of flow and dosing—digital display of RPM for accurate control

DP2000

DP2100

Specifications and ordering information

MODEL	DP2000 (thin wall)	DP2100 (thick wall)
Cat. No	**15397547**	**15307557**
PERFORMANCE		
Flow capacity (mL/min)	0.5 to 3,000	14 to 4,000
RPM	4 to 400	
Reversible	Yes	
Pump open lockout or door sensor	Yes	
ELECTRICAL		
External control – input	0 to 20 mA, 4 to 20 mA, or 0 to 10V; Scalable START/STOP, DIR. (CW/CC), PRIME via contact closure Remote / Local Indication	
External control – output	4 to 20 mA, or 0 to 10V	
Motor running logic	N.O. or N.C. (1A @ 24V)	
Tachometer output	5V, TTL pulse	
Voltage (50/60 Hz)	115/230V AC (auto selected)	
Motor type	1/10 hp, (75 w) PMDC	
Speed resolution (repeatability)	±0.1 rpm @ 4 to 400 RPM	
Speed regulation	±0.25% (full scale)	
PHYSICAL SPECIFICATIONS		
Operating temperature	0 to 40°C (32 to 104°F)	
Materials	Housing: ABS; Pump head: GF Nylon, Delrin™, stainless steel, Cold-rolled steel, Buna-N, Polycarbonate	
IP rating	IP31	
Agency approvals	ETL, cETL, CE, RoHS	
Controller dimensions (L × W × H)	31.7 x 27.9 x 15.2 cm (12.5 x 11 x 6 in.)	
Shipping weight	7kg (15lb)	
Warranty	One year	

15307567 Handheld remote controller. DH120; for on/off control; route tubing through handle for dispensing applications.

Multichannel tubing pumps

Accurate multichannel pumping

Fisherbrand MCP3000 Series peristaltic pumps provide multichannel pumping with the accuracy of flow control and broad flow range to efficiently service most pumping applications, including bioassays, electrophoresis, chromatography and pH control.

With flow ranges from 1.2 µL/min to 760 mL/min and three modes of operation: flow, timed flow and programmable cycle dispensing—these multichannel pumps can save considerable time and resources while greatly improving process efficiency.

Featuring remote control of speed, pumping direction, and start/stop/purge, MCP3000 pumps are available with a wide range of interchangeable multichannel pump heads, drives and tubing and can deliver up to 12 channels simultaneously. A pre-configured MCP3000 pump system consists of a pump head, drive, and a full set of cassettes.

MCP3000

Multichannel tubing pumps — Product benefits and features

Easy to maintain

- Cassette design provides fast tubing changes, and eliminates hardware in other multi-channel designs
- Rugged motor and controls ensure long-term reliable operation
- Contamination free pumping—the fluid contacts only the tubing material

Easy to use

- Programmable in seven languages—provides easy set-up in almost any global location
- Universal voltage and frequency capability allows operation world-wide—IEC320 socket provided
- Quick start guide included for fast, easy set-up

Diverse performance range

- Three modes of operation—Flow, Timed Flow and Programmable Cycle Dispensing
- Lower pulsation flow and higher accuracy at low volumes and low flow rates
- High repeatability on all channels
- Cassettes provide defined and repeatable occlusion conditions
- Available in 4, 8, or 12 channel models (2, 4, and 6 channels when using the large cassettes)
- Capable of accurate, metered, parallel flows with difficult or multiphase fluids

Ergonomic design

- Digital display of pump speed, flow rate, or number of dispense cycles
- Adjustable occlusion setting provides flow and pressure performance, and optimises tubing life
- Valveless replacement alternative to diaphragm and piston pumps

Specifications and ordering information

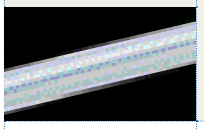
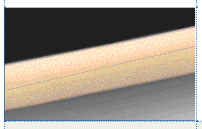
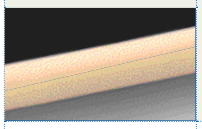
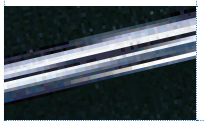
MODEL	MCP3000 4/6	MCP3000 4/8	MCP3000 8/3	MCP3000 8/4	MCP3000 12/6	MCP3000 12/8
Cat. No	**15317557**	**15337557**	**15347557**	**15357557**	**15367557**	**15387557**
Max number of channels	4	4	8	8	12	12
Number of rollers	6	8	3	4	6	8
Cartridges Included:						
Small	–	4	–	8	–	12
Large	2	–	4	–	6	–
PERFORMANCE						
Flow capacity (mL/min)	0.21 to 280	0.013 to 67.0	0.22 to 530	0.02 to 100	0.033 to 56	0.002 to 14.0
RPM	4 to 400				0.8 to 80	
Reversible	Yes					
ELECTRICAL						
External control – input	0 to 20 mA, 4 to 20 mA, or 0 to 10V; Scalable START/STOP, DIR. (CW/CC), PRIME via contact closure Remote / Local Indication					
External control – output	4 to 20 mA, or 0 to 10V					
Motor running logic	N.O. or N.C. (1A @ 24V)					
Tachometer output	5V, TTL pulse					
Voltage (50/60 Hz)	115/230V AC (auto selected)					
Motor type	1/10 hp, (75 w) PMDC					
Speed resolution (repeatability)	±0.1 rpm @ 4 to 400 RPM					
Speed regulation	±0.25% (full scale)					
PHYSICAL SPECIFICATIONS						
Operating temperature	0 to 40°C (32 to 104°F)					
Materials	Housing: ABS; Pump head: Polysulfone, Stainless steel, Anodised aluminium, Rulon, Buna-N; Cartridge: Polycarbonate, GF Nylon, Anodised aluminium knob.					
IP rating	IP31					
Agency approvals	ETL, cETL, CE, RoHS					
Controller dimensions (L × W × H)	31.7 x 27.9 x 15.2 cm (12.5 x 11 x 6 in.)					
Shipping weight	7kg (15lb)					
Warranty	One year					

15317567 Cartridge, small; for MCP3000 8/3 and 8/4
15327567 Cartridge, large; for MCP3000 8/3 and 8/4
15337567 Cartridge, small; for MCP3000 4/6, 4/8, 12/6 and 12/8
15347567 Cartridge, large; for MCP3000 4/6, 4/8, 12/6 and 12/8

Pump tubing

Tubing formulations to meet the needs of your application

High-precision peristaltic pump tubing is manufactured to exacting specifications to optimise accuracy, repeatability, and to provide enhanced tubing life. This tubing has been tested and quality assured to operate specifically in peristaltic pumps.

Pump tubing formulation	Advantages	Application suitability†							Gas permeability	Sterilisation
		Acids	Alkalis	Organic solvents	Pressure	Vacuum	Viscous fluids	Sterile fluids		
Silicone (platinum-cured) 	• Ultra-smooth inner surface minimises particle entrapment • No leachable additives, DOP, or plasticisers; phthalate and latex-free; odourless and nontoxic, fungus-resistant • No taste imparted to transported fluids • Weather, ozone, corona and radiation resistant • Translucent, clear to light amber	N/R	N/R	N/R	F	G	F	E	CO_2: 25,147 H_2: — O_2: 4715 N_2: 2284	Sterilise by EtO, autoclave, or gamma radiation
		Temperature range: Static: –50 to 230°C Dynamic (pumping): –40 to 100°C								
PharMed™ BPT 	• Great for tissue and cell work— non-toxic and non-haemolytic • 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 • Opaque, beige	G	G	N/R	G	G	E	E	CO_2: 1200 H_2: — O_2: 200 N_2: 80	Sterilise by EtO, autoclave, or gamma radiation up to 2.5 Mrad
		Temperature range: Static: –51 to 132°C Dynamic (pumping): –20 to 100°C								
Norprene™ Food (A 60 F) 	• Longest life, good flow consistency • Heat and ozone resistant • Good resistance to acids/alkalis • Heat sealable, non-ageing and non-oxidising • High dielectric constant • Opaque, beige	G	G	N/R	E	E	E	G	CO_2: 1200 H_2: — O_2: 200 N_2: 80	Sterilise by EtO, autoclave, or gamma irradiation
		Temperature range: Static: –59 to 132°C Dynamic (pumping): –20 to 100°C								
Tygon™ E-Food (B-44-4X) 	• Bore is extremely smooth (better than most stainless steels) • Nontoxic, will not affect taste or odour, 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	CO_2: 270 H_2: 97 O_2: 60 N_2: 30	Sterilise by EtO or autoclave
		Temperature range: Static: –36 to 74°C Dynamic (pumping): 0 to 40°C								

†E = Excellent, G = Good, F = Fair, P = Poor, N/R = Not Recommended

Tubing coils for CPT100 pumps Cat. Nos 15327527, 15337527, 15307537

Inner diameter	0.19mm	0.25mm	0.89mm	1.42mm	2.06mm	2.79mm
Flow (mL/min) at 1.7 to 10rpm	0.002 to 0.013	0.004 to 0.022	0.041 to 0.25	0.09 to 0.57	0.18 to 1.05	0.25 to 1.65
Flow (mL/min) at 13 to 80rpm	0.017 to 0.10	0.03 to 0.18	0.33 to 2.0	0.75 to 4.5	1.4 to 8.5	1.8 to 11.0
Flow (mL/min) at 50 to 300rpm	0.07 to 0.43	0.12 to 0.73	1.4 to 8.3	3.2 to 19	5.9 to 35.2	8.3 to 50
Silicone, platinum-cured (15m/49.2 ft)	-	-	15571375	15581375	15591375	15501385
PharMed™ BPT (30 m/98.4ft)	-	15561385	15571385	15581385	15591385	15501395
Tygon™ E-Food (30 m/98.4ft)	15561395	15571395	15581395	15591395	15501405	15511405

*Two-stop tubing links for Cat. No 15357547 (CPT150) and Cat. No 15367547 (CPT300) pumps

Inner diameter	0.8mm	1.6mm	3.2mm	4.8mm
Flow (mL/min) with FH15	0.8 to 4.0	2.8 to 14	11 to 54	21 to 105
Flow (mL/min) with FH30	0.8 to 4.0	2.8 to 14	Not recommended	
Silicone, platinum-cured (6/pk)	15593042	15501365	15511365	15521365
PharMed™ BPT (12/pk)	15541365	15551365	15561365	15571365
Norprene™ Food (12/pk)	15551305	15561305	15511365	-
Tygon™ E-Food (12/pk)	15581365	15591365	15501375	15511375

Tubing coils for Cat. Nos 15377547 (GP1000), 15387547 (GP1100), 15397547 (DP2000) and 15307557 (DP2100) pumps

Description	1.6mm (thin wall) tubing for GP1000 and DP2000 pumps						2.4mm (thick wall) tubing for GP1100 and DP2100 pumps			
Inner diameter	0.8mm	1.6mm	3.2mm	4.8mm	6.4mm	8.0mm	4.8mm	6.4mm	8mm	9.5mm
Hose barb size	0.79mm	1.58mm	3.17mm	4.77mm	6.35mm	7.93mm	4.77mm	6.35mm	7.93mm	9.52mm
Flow (mL/min)	0.5 to 40	2.0 to 150	6.5 to 550	16 to 1200	24 to 2000	36 to 3000	14 to 1200	24 to 2000	36 to 3000	48 to 4000
Length/pack	15m	15m	15m	15m	15m	15m	15m	15m	15m	15m
Silicone, platinum cured	-	15425603	15435613	15561315	15571315	15581315	15591315	15501325	15511325	15521325
Pharmed™ BPT	15581295	15591295	15501305	15511305	15521305	15531305	-	-	-	-
Norprene™ Food	-	15531305	15551305	15561305	15571305	15581305	-	-	-	-
Tygon™ E-Food	-	15420943	15591305	15501315	15511315	15521315	-	15531315	15541315	15551315

*Two-stop tubing links for MCP3000 pumps - for small cartridges

For use with pump model:	Number of rollers	Flow rates (mL/min) for indicated pump model and tubing internal diameter (ID)					
		0.19mm ID	0.25mm ID	0.89mm ID	1.42mm ID	2.06mm ID	2.79mm ID
Cat. No 15337557 (MCP3000 4/8)W	8	0.013 to 0.60	0.018 to 0.91	0.18 to 9.1	0.04 to 20.0	0.88 to 44.0	1.38 to 67.0
Cat. No 15357557 (MCP3000 8/4)	4	0.02 to 0.85	0.03 to 1.0	0.26 to 13.0	0.53 to 26.0	1.14 to 57.0	2.06 to 100.0
Cat. No 15387557 (MPC3000 12/8)	8	0.002 to 0.11	0.004 to 0.20	0.03 to 1.9	0.07 to 4.3	0.14 to 8.6	0.25 to 14.0
Silicone, platinum-cured (6/pk)		-	-	15531375	15541375	15551375	15561375
PharMed™ BPT (12/pk)		15541385	15511385	15521385	15531385	15541385	15551385
Tygon™ E-Food (12/pk)		15511395	15521395	15531395	15541395	15408914	15551395

*Two-stop tubing links for MCP3000 pumps - for large cartridges

For use with pump model:	Number of rollers	Flow rates (mL/min) for indicated pump model and tubing internal diameter (ID)					
		0.8mm ID	1.6mm ID	3.2mm ID	4.8mm ID	6.4mm ID	2.79mm ID
153175557 (MCP3000 4/6)	6	0.21 to 10.0	0.6 to 30.0	2.2 to 110	4.0 to 200	5.6 to 280	1.38 to 67.0
15347557 (MCP3000 8/3)	3	0.22 to 11.0	0.84 to 42.0	3.2 to 160	6.8 to 340	10.6 to 530	2.06 to 100.0
15367557 (MCP3000 12/6)	6	0.033 to 1.9	0.012 to 6.6	0.35 to 20.0	0.70 to 40.0	0.98 to 56.0	0.25 to 14.0
Silicone, platinum-cured (6/pk)		15593042	15501365	15511365	15521365	15531365	15561375
PharMed™ BPT (12/pk)		15541365	15551365	15561365	15571365	15531365	15551385
Norprene™ Food (12/pk)		15551305	15561305	15511365	-	15531365	15551395
Tygon™ E-Food (12/pk)		15581365	15591365	15501375	15511375	15521375	

*Two-stop tubing links are 40.6cm long

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A series of peristaltic pump systems and tubing

Pump tubing compatability charts

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
D: Severe effect; not recommended for use; severe softening, swelling and/or shrinkage
—: No data available

Tubing formulations

PN: PharMed™ BPT, Norprene™ Food
S: Silicone (platinum-cured)
T: Tygon™ E-Food

Fluid	Tubing formulation PN	S	T
Acetaldehyde	D	B	D
Acetate LMW	A	—	D
Acetic acid <5%	A	A	A
Acetic acid >5%	A	A	B
Acetic anhydride	A	C	D
Acetone	D	C	D
Acetonitrile	B	—	D
Acetyl bromide	C	—	D
Acetyl chloride	C	C	D
Air	A	A	A
Aliphatic hydrocarbons	D	—	D
Aluminium chloride	A	B	A
Aluminium sulfate	A	A	A
Alums	A	A	A
Ammonia, gas/liquid	A	C	B
Ammonium acetate	A	—	A
Ammonium carbonate	A	C	A
Ammonium chloride	A	C	A
Ammonium hydroxide	A	A	B
Ammonium nitrate	A	C	A
Ammonium phosphate	A	A	A
Ammonium sulfate	A	A	A
Amyl acetate	B	D	D
Amyl alcohol	D	D	D
Amyl chloride	C	D	D
Aniline	C	D	D
Aniline hydrochloride	C	D	D
Aqua regia (80% HCl, 20% HNO_3)	D	D	D
Aromatic hydrocarbons	D	—	D
Arsenic salts	A	—	A
Barium salts	A	A	A
Benzaldehyde	D	B	D
Benzenesulfonic acid	D	D	D
Bleaching liquors	A	B	A
Boric acid	A	A	A
Bromine	D	D	D
Butane	A	D	A
Butanol (butyl alcohol)	D	B	D
Butyl acetate	B	D	D
Butyric acid	B	D	D
Calcium oxide	A	A	A
Calcium salts	A	B	A
Carbon bisulfide	D	D	D
Carbon dioxide	A	B	A
Carbon tetrachloride	D	D	D
Chlorine, dry	C	D	A
Chlorine, wet	D	D	C
Chloroacetic acid	B	—	A
Chlorobenzene	D	D	D

Fluid	Tubing formulation PN	S	T
Chlorobromomethane	B	D	D
Chloroform	C	D	D
Chlorosulfonic acid	D	D	D
Chromic acid, 30%	A	C	C
Chromium salts	A	—	A
Copper salts	A	A	A
Cresol	D	D	B
Cyclohexane	D	D	D
Cyclohexanone	D	D	D
Diacetone alcohol	A	B	D
Dimethyl formamide	B	B	D
Dimethyl sulfoxide (DMSO)	A	—	—
Essential oils	D	C	D
Ethanol (ethyl alcohol)	C	A	D
Ether	C	D	D
Ethyl acetate	B	B	D
Ethyl bromide	D	D	D
Ethyl chloride	C	D	D
Ethylamine	D	C	D
Ethylene chlorohydrin	A	C	D
Ethylene dichloride	C	D	D
Ethylene glycol	A	A	A
Ethylene oxide	A	D	A
Fatty acids	C	C	B
Ferric chloride	A	B	A
Ferric sulfate	A	B	A
Ferrous chloride	A	C	A
Ferrous sulfate	A	C	A
Fluoroboric acid	D	A	C
Fluoroborate salts	A	—	A
Fluorosilicic acid	C	D	A
Formaldehyde	D	B	D
Formic acid, 25%	A	B	B
Freon™ TMS	D	—	D
Gasoline, high-aromatic	D	D	D
Gasoline, nonaromatic	D	D	D
Glucose	A	A	A
Glue, P.V.A.	A	A	A
Glycerin	A	A	A
Hydriodic acid	D	—	A
Hydrobromic acid, 30%	D	D	B
Hydrochloric acid (dil)	A	D	A
Hydrochloric acid (med)	B	D	C
Hydrochloric acid (conc)	—	D	C
Hydrocyanic acid	A	C	A
Hydrocyanic acid, gas, 10%	A	C	A
Hydrofluoric acid, 50%	D	D	C
Hydrofluoric acid, 75%	—	D	D
Hydrogen peroxide (dil)	A	A	A

Fluid	Tubing formulation PN	S	T
Hydrogen peroxide, 90%	B	B	D
Hypochlorous acid	A	D	A
Iodine solutions	A	C	A
Iodoform	—	—	—
Kerosene	D	D	D
Ketones	D	—	D
Lacquer solvents	B	D	D
Lactic acid, 3–10%	A	A	A
Lead acetate	A	D	A
Linseed oil	C	A	D
Lithium hydroxide	B	D	A
Magnesium chloride	A	A	A
Magnesium sulfate	A	A	A
Malic acid	A	B	A
Manganese salts	A	B	A
Mercury salts	A	—	A
Methane	A	D	A
Methanol (methyl alcohol)	A	A	C
Methyl chloride	C	D	D
Methyl ethyl ketone (MEK)	D	D	D
Mixed acid (40% H_2SO_4, 15% HNO_3)	B	—	B
Molybdenum disulfide	—	—	—
Monoethanolamine	C	B	D
Naphtha	D	D	D
Natural gas	A	A	A
Nickel salts	A	A	A
Nitric acid (dil)	A	B	A
Nitric acid (med)	A	C	C
Nitric acid (conc)	D	D	D
Nitrobenzene	D	D	D
Nitrogen oxides	A	D	A
Nitrous acid	A	—	A
Oils, animal	C	B	D
Oils, mineral	D	B	C
Oils, vegetable	C	B	D
Oleic acid	C	D	D
Oxalic acid, cold	B	B	C
Oxygen, gas	A	B	A
Palmitic acid, 100% in ether	C	D	D
Perchloric acid	A	D	C
Perchloroethylene	C	D	D
Phenol (carbolic acid)	A	D	B
Phosphoric acid, 50%	A	C	C
Phthalic acid	A	B	D
Plating solutions	A	D	A
Polyglycol	B	A	A
Potassium carbonate	A	—	A
Potassium chlorate	B	B	B

Fluid	Tubing formulation PN	S	T
Potassium hydroxide (med)	A	B	B
Potassium hydroxide (conc)	A	C	D
Potassium iodide	A	—	A
Propanol (propyl alcohol)	C	A	D
Pyridine	C	D	D
Silicone fluids	A	C	B
Silicone oils	C	C	B
Silver nitrate	A	A	A
Soap solutions	B	A	A
Sodium bicarbonate	A	A	A
Sodium bisulfate	A	—	A
Sodium bisulfite	A	A	A
Sodium borate	A	A	A
Sodium carbonate	A	A	A
Sodium chlorate	A	C	A
Sodium chloride	A	A	A
Sodium ferrocyanide	A	—	B
Sodium hydrosulfite	B	—	A
Sodium hydroxide (dil)	A	A	A
Sodium hydroxide, 25%	A	B	C
Sodium hydroxide (conc)	—	—	C
Sodium hypochlorite, <5%	A	B	A
Sodium hypochlorite, >5%	A	B	A
Sodium nitrate	A	D	A
Sodium silicate	A	A	A
Sodium sulfide	A	A	A
Sodium sulfite	A	A	A
Steam, up to 40 psi	C	A	D
Stearic acid	C	B	A
Styrene	D	D	D
Sulfuric acid (dil)	A	D	A
Sulfuric acid (med)	A	D	A
Sulfuric acid (conc)	D	D	D
Sulfurous acid	A	D	A
Tannic acid	B	B	C
Tanning liquors	A	—	A
Tartaric acid	A	A	A
Tin salts	A	B	A
Toluene (toluol)	D	D	D
Trichloroacetic acid	B	D	A
Trichloroethylene	D	D	D
Trisodium phosphate	A	—	A
Turpentine	D	D	D
Urea	A	B	A
Uric acid	A	—	A
Water, fresh	A	B	A
Water, salt	A	A	A
Xylene	D	D	D
Zinc chloride	A	A	A

s 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 uses, including establishing the compatibility of any fluid with the material through which it is coming into contact.

s Warning

The information in these tables has been supplied by the tubing manufacturers and is to be used ONLY as a guide to select your tubing. Always test fluids and tubing before use. Supplier 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.

s 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.

Other pump and tubing accessories

Cat. No	Description	Pack qty
13571850	Pump foot switch for Cat. No 15377547 (GP1000) and Cat. No 15387547 (GP1100)	1
12683606	Barbed tubing connector, straight, polypropylene 6.4mm ID	10
15511295	Barbed tubing connector, straight, polypropylene 8.0mm ID	10
15521295	Barbed tubing connector, straight, polypropylene 9.6mm ID	10
15531295	Barbed tubing connector, straight, polypropylene 4.8mm ID	10
13288169	Barbed tubing connector, straight, polypropylene 3.2mm ID	10
15397557	DH120 Dispense handle for Cat. No 15377547 (GP1000)	1
15307567	DH120 Dispense handle for Cat. No 15397547 (DP2000)	1
15541295	Dispensing tip with luer lock	1
15551295	Luer kit	1
15331122	16-Gauge dispensing nozzle SS with luer connector	1
15212665	13-Gauge dispensing nozzle SS with luer connector	1
11736289	Tubing sinker set 1 large and 1 small	1
15392959	Small sinker for tube ID 6mm to 3.2mm	1
15571295	Large sinker for tube ID 4.8mm to 6.4mm	1

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Fluid Handling

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