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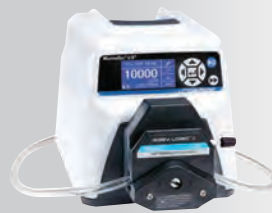
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Look Inside for...



Masterflex® L/S®
Digital Pump System

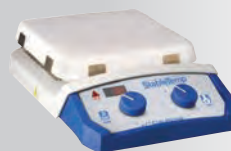


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Fluid Handling

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Why MASTERflex® Peristaltic Pumps?

1 Easy

- Quick installation
- Low maintenance
- Easy tubing changeover

2 Durable

- Trusted for over 45 years
- Broad chemical compatibility

3 Versatile

- From research to process
- Handles just about any fluid
- Multichannel capabilities

4 Customizable

- Configurable systems
- Many tubing options
- Easy scale-up

5 Accurate

- Flow ranges from 0.0006 mL/min to 42 L/min
- Rigorous design and testing standards
- Tubing is custom manufactured to precise tolerances



Selecting a Masterflex® Pump: As Easy As

A Application Requirements

- What is my required flow rate?
- What chemical am I pumping?
- Do conditions such as viscosity or back pressure play an important role in my decision?

B Base a Pump Series on Your Flow Rate

- Use the table below to find the pump series that best fits your flow rate needs

C Complete Your System

- L/S and I/P pump series are divided into three components—pump head, tubing, and drive
- Select the three components from the same series or choose a complete preconfigured system

Masterflex pump series	Features	Flow range	Speed		Remote control capability	Multichannel capabilities	Page(s)
			Fixed	Variable			
C/L®	Compact, low-flow pump that easily fits on benchtop or mounts within a panel	0.002 to 43 mL/min		✓	Yes	Yes	3
L/S®	High-accuracy drives for precise flow control and dispensing	0.0006 to 3400 mL/min	✓	✓	Yes	Yes	4-13
I/P®	Powerful systems that provide better protection from possible hazards such as dust and water	0.012 to 19 LPM	✓	✓	Yes	Yes	14-17
B/T®	Highest flow rates—ideal for large batch fluid transfer with excellent hazard protection	0.3 to 42 LPM	✓	✓	Yes	Yes	ColeParmer.com

ColeParmer.com/Masterflex

C/L® Variable-Speed Compact Pumps

Pump in even the tightest spaces!

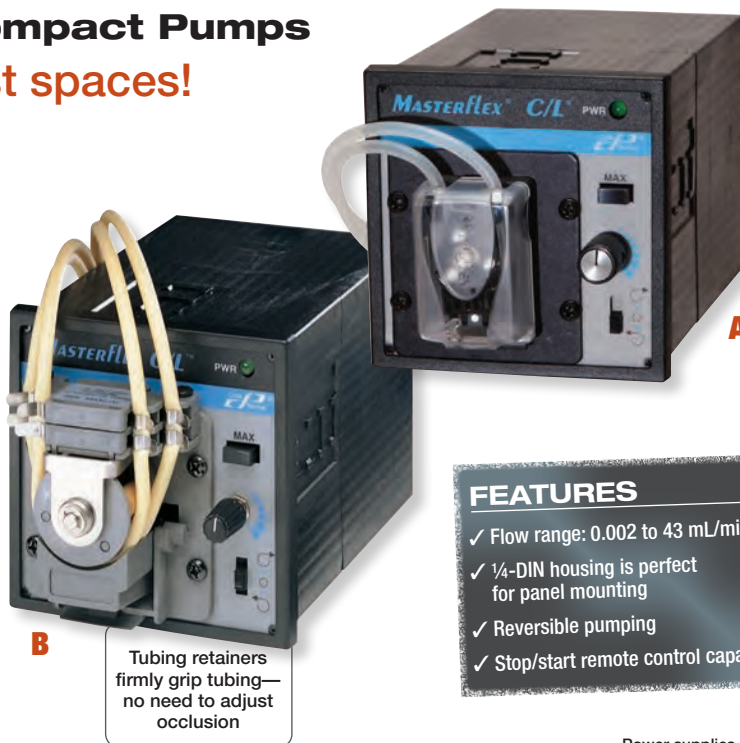
- Pump fluids in either direction—easily switchable reversing motor
- Stop/start remotely via contact closure
- MAX button quickly primes or purges tubing
- Both pumps include 5 ft (1.5 m) of 0.89-mm ID Tygon® E-LFL tubing.

A. C/L Single-Channel Pumps

- Quick and easy tubing changes—open cover and release occlusion bed in one motion
- Pump from 0.002 to 43 mL/min
- Pump head made from polyphenylene sulfide, acetal, and copolyester; stainless steel rollers

B. C/L Dual-Channel Pumps

- Pump from 0.002 to 12.3 mL/min per channel, depending on drive and tubing
- Pump head made of polyphenylene sulfide and stainless steel; rollers made of acetal co-polymer



FEATURES

- ✓ Flow range: 0.002 to 43 mL/min
- ✓ ¼-DIN housing is perfect for panel mounting
- ✓ Reversible pumping
- ✓ Stop/start remote control capabilities

Power supplies are:

ISO9001:2008 CERTIFIED SUPPLIER

rpm	Speed control (repeatability)	Number of channels	Number of rollers	Reversible motor	IP rating	Dimensions—¼ DIN (L x W x H)	Power		Catalog number	Price
							VAC, Hz	Amps		
A. C/L single-channel compact pumps										
1.7 to 10	±5%	1	4	Yes	IP22	7" x 3¼" x 3½" (17.8 x 9.5 x 8.9 cm)	90 to 260, 50/60	110 mA at 115 VAC	TR-77122-04	
							12 VDC†	—	TR-77122-06	
13 to 80							90 to 260, 50/60	175 mA at 115 VAC	TR-77122-14	
							12 VDC†	—	TR-77122-16	
50 to 300							90 to 260, 50/60	400 mA at 115 VAC	TR-77122-24	
							12 VDC†	—	TR-77122-26	
B. C/L dual-channel compact pumps										
1 to 6	±5%	2	6	Yes	IP22	7½" x 3¾" x 3½" (19 x 9.5 x 8.9 cm)	90 to 260, 50/60	110 mA at 115 VAC	TR-77120-32	
							12 VDC†	—	TR-77120-52	
10 to 60							90 to 260, 50/60	175 mA at 115 VAC	TR-77120-42	
							12 VDC†	—	TR-77120-62	

†Power supply not included with 12 VDC models.

TR-77120-03 Brackets for panel mounting. Set of 2

TR-77200-07 Replacement power supply, 100 to 240 VAC, for pump 77122-24

TR-77120-11 Replacement power supply, 100 to 240 VAC, for pumps 77122-04, -14; 77120-32 and -42

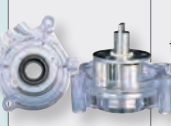








Microbore Pump Tubing Ordering Information

Tube ID (mm)	Tygon® E-Lab	Silicone (platinum-cured)	Silicone (peroxide-cured)	PharMed® BPT	Tygon E-LFL (long flex life)	Viton®	Puri-Flex™	C-Flex®	Solvent/hydrocarbon
0.19	NEW TR-06460-10	—	—	—	—	—	TR-96418-10	TR-95718-10	TR-95712-10
0.25	TR-06460-12	—	—	TR-95809-12	—	—	TR-96418-12	TR-95718-12	TR-95712-12
0.51	TR-06460-18	TR-95590-18	—	TR-95809-18	TR-06449-18	—	TR-96418-18	TR-95718-18	TR-95712-18
0.89	TR-06460-26	TR-95590-26	TR-07625-26	TR-95809-26	TR-06449-26	TR-97632-26	TR-96418-26	TR-95718-26	TR-95712-26
1.14	TR-06460-30	TR-95590-30	TR-07625-30	TR-95809-30	TR-06449-30	TR-97632-30	TR-96418-30	TR-95718-30	TR-95712-30
1.42	TR-06460-34	TR-95590-34	TR-07625-34	TR-95809-34	TR-06449-34	TR-97632-34	TR-96418-34	TR-95718-34	TR-95712-34
2.06	TR-06460-42	TR-95590-42	TR-07625-42	TR-95809-42	TR-06449-42	TR-97632-42	TR-96418-42	TR-95718-42	TR-95712-42
2.79	TR-06460-48	TR-95590-48	TR-07625-48	TR-95809-48	TR-06449-48	TR-97632-48	TR-96418-48	TR-95718-48	TR-95712-48
Quantity/pack	100 ft (30.4 m)	50 ft (15.2 m)	50 ft (15.2 m)	100 ft (30.4 m)	100 ft (30.4 m)	50 ft (15.2 m)	50 ft (15.2 m)	50 ft (15.2 m)	50 ft (15.2 m)
Price/pk									

Flow Rates in mL/min

rpm	Microbore pump tubing size (ID)								
	0.19 mm	0.25 mm	0.51 mm	0.89 mm	1.14 mm	1.42 mm	2.06 mm	2.79 mm	
1 to 6	0.002 to 0.013	0.0028 to 0.017	0.012 to 0.07	0.036 to 0.20	0.057 to 0.34	0.08 to 0.49	0.15 to 0.88	0.22 to 1.3	
1.7 to 10	0.002 to 0.013	0.004 to 0.022	0.015 to 0.087	0.041 to 0.25	0.064 to 0.39	0.09 to 0.57	0.18 to 1.05	0.28 to 1.65	
10 to 60	0.02 to 0.13	0.03 to 0.18	0.12 to 0.70	0.36 to 2.1	0.55 to 3.3	0.8 to 4.9	1.5 to 8.9	2.1 to 12.3	
13 to 80	0.017 to 0.10	0.03 to 0.18	0.12 to 0.70	0.33 to 2.0	0.52 to 3.1	0.75 to 4.5	1.4 to 8.5	1.8 to 11.0	
50 to 300	0.06 to 0.38	0.11 to 0.67	0.43 to 2.6	1.2 to 7.4	1.9 to 11.5	2.8 to 17.0	5.3 to 32	7.2 to 43	

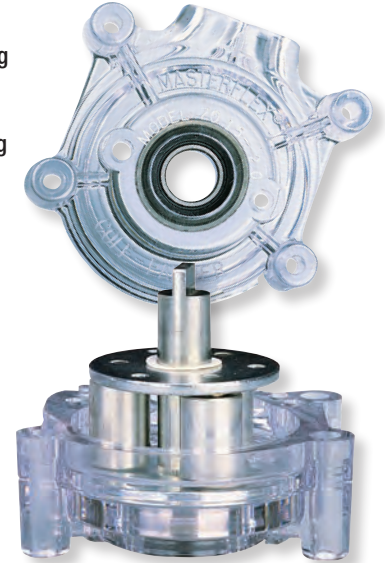
L/S® Pump Heads Selection Guide

Description	Flow rates (mL/min)	Multichannel or stackable	Special features	Page number
Standard				
	0.001 to 2900 mL/min	Yes, stack up to 4 heads	<ul style="list-style-type: none"> ✓ Highest precision, yet economical ✓ Accurate, repeatable fluid transfer ✓ Each head dedicated to one tubing size 	4
Easy-Load® II				
	0.001 to 2900 mL/min	Yes, stack up to 4 heads	<ul style="list-style-type: none"> ✓ Easy tubing changes ✓ Automatic retention ✓ Adjustable occlusion 	5
Easy-Load® 3				
	0.001 to 2900 mL/min	Yes, stack up to 4 heads	<ul style="list-style-type: none"> ✓ Easy tubing changes ✓ Automatic retention ✓ Same side tubing entry/exit ✓ Install and stack without tools or hardware 	6
Easy-Load®				
	0.001 to 2300 mL/min	Yes, stack up to 4 heads	<ul style="list-style-type: none"> ✓ Load or change multiple tubing sizes quickly and easily ✓ Low maintenance ✓ Models available for ATEX Zone 2 applications 	6
High-Performance				
	0.006 to 3400 mL/min	No	<ul style="list-style-type: none"> ✓ Highest flow rate of any L/S pump head ✓ Up to 100 psi with L/S HP (High-Pressure) pump tubing ✓ ATEX Zone 2 applications model available 	ColeParmer.com
PTFE-Tubing				
	0.001 to 65 mL/min	No	<ul style="list-style-type: none"> ✓ Uses rigid PTFE-tubing ✓ Pressures up to 150 psi ✓ Transfer aggressive solvents ✓ High purity 	ColeParmer.com
Multichannel				
	0.00005 to 2300 mL/min (per channel)	Yes, stack up to 32 channels	<ul style="list-style-type: none"> ✓ Synchronous flow from up to 32 channels without cartridges ✓ Two-stop tubing sets are easy to load with no adjustment needed 	ColeParmer.com
Multichannel Cartridge				
	0.00001 to 1700 mL/min (per channel)	Yes, 1 to 12 channels	<ul style="list-style-type: none"> ✓ Synchronous flow rates ✓ Run up to 12 channels on a single pump head ✓ Easy tubing changes ✓ Holds tubing securely in place 	ColeParmer.com
PTFE-Diaphragm				
	10.0 to 800 mL/min	No	<ul style="list-style-type: none"> ✓ PTFE and borosilicate glass are the only wetted parts ✓ Up to 100 psi (6.9 bar) ✓ Accurate metering ✓ Handles aggressive fluids 	ColeParmer.com

L/S® Standard Pump Heads

Ideal for accurate and repeatable fluid transfer applications

- Available with PC housing with CRS or SS rotor, or PPS housing with SS rotor
- PC housing allows you to see pump in operation; PPS housing and SS rotors have excellent chemical resistance



FEATURES

- ✓ Best overall pump head performance
- ✓ Designed and optimized for one tubing size
- ✓ Stack up to four heads

A. Standard Pump Heads for Precision Tubing

- Flow rates: 0.001 to 2300 mL/min
- Perfect for common fluid transfer applications
- Select a pump head for one of the following precision tubing sizes: L/S 13, L/S 14, L/S 16, L/S 17, L/S 18

B. Standard Pump Heads for High-Performance Precision Tubing

- Flow rates: 0.033 to 2900 mL/min
- Accepts our high-performance precision tubing—choose these pump heads for better pressure generation, suction lift, viscous fluid transfer, and longer tubing life
- Select a pump head for one of the following high-performance tubing sizes: L/S 15, L/S 24, L/S 35, L/S 36



Pump tubing size	mL per rev	Flow rates in mL/min		Catalog number†‡		
		0.02 to 100 rpm	6 to 600 rpm	PC housing		PPS housing
				CRS rotor	SS rotor	SS rotor
A. Standard pump heads for precision pump tubing						
L/S 13	0.06	0.001 to 6	0.36 to 36	TR-07013-20	TR-07013-21	TR-07013-52
L/S 14	0.21	0.004 to 21	1.3 to 130	TR-07014-20	TR-07014-21	TR-07014-52
L/S 16	0.8	0.016 to 80	4.8 to 480	TR-07016-20	TR-07016-21	TR-07016-52
L/S 17	2.8	0.059 to 280	17 to 1700	TR-07017-20	TR-07017-21	TR-07017-52
L/S 18	3.8	0.077 to 380	23 to 2300	TR-07018-20	TR-07018-21	TR-07018-52
		Price				
B. Standard pump heads for high-performance precision pump tubing						
L/S 15	1.7	0.033 to 170	10 to 1000	TR-07015-20	TR-07015-21	TR-07015-52
L/S 24	2.8	0.057 to 280	17 to 1700	TR-07024-20	TR-07024-21	TR-07024-52
L/S 35	3.8	0.077 to 380	23 to 2300	TR-07035-20	TR-07035-21	—
		Price				
L/S 36	4.8	0.096 to 480	29 to 2900	TR-07036-30	TR-07036-31	—
		Price				

†PC = polycarbonate PPS = polyphenylene sulfide
CRS = cold-rolled steel SS = stainless steel

‡Maximum system pressure = L/S 13, L/S 14, L/S 15, L/S 16, L/S 24: 40 psi (2.7 bar); L/S 17, L/S 36: 20 psi (1.4 bar); L/S 18: 15 psi (1.0 bar); L/S 35: 35 psi (2.4 bar)

Mounting Hardware

Stack up to four L/S Standard pump heads on one drive (see drive specifications for recommended number of heads). Hardware is stainless steel.

Heads to be mounted	Catalog number	Price/st
Hardware for Standard Heads L/S 13 to 35		
One	TR-07013-04	
Two	TR-07013-05	
Three	TR-07013-08	
Four	TR-07013-09	
Hardware for Standard Heads L/S 36		
One	TR-07036-01	
Two	TR-07036-02	

L/S® Easy-Load® II Pump Heads

No more slipping of tubing—automatic retention holds it securely in place



- Reduced pulsation and improved pressure performance and mechanical stability with standard four-roller rotor
- Pump heads made of durable PPS housing
- Choice of rotors—economical CRS rotors or SS rotors for better chemical resistance and durability
- Don't let pressure get to you. Choose models with adjustable occlusion—tighten for higher pressure, loosen for longer tubing life

A. Pump Heads for Precision Pump Tubing (not shown)

- Wide flow range for wider range of applications from 0.06 to 2300 mL/min

B. Pump Heads for High-Performance Precision Pump Tubing

- Pump viscous liquids and get better pressure generation and suction lift

C. Two-Channel Pump Heads for Precision Pump Tubing

- No need to stack heads, get two channels in one head!

What's included: single-channel mounting hardware and a 15" (38-cm) length of silicone pump tubing. Pump head comes ready to mount to drive. Hardware for mounting two or more heads is available below.



- #### FEATURES
- ✓ Load tubing easily
 - ✓ Accepts several tubing sizes for a wide flow range
 - ✓ Stack up to four heads



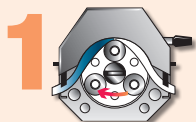
Pump tubing size accepted	mL per rev	Flow rates in mL/min		Maximum system pressure† psi (bar)	Catalog number*					
		1 to 100 rpm	6 to 600 rpm		Fixed occlusion		Adjustable occlusion			
					CRS rotor		SS rotor		SS rotor	
Cat. no.	Price	Cat. no.	Price	Cat. no.	Price					
A. Easy-Load II pump heads for precision pump tubing (not shown)										
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)						
L/S 14	0.21	0.21 to 21	1.3 to 130	40 (2.7)						
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)	TR-77200-50		TR-77200-60		TR-77201-60	
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)						
L/S 17	2.8	2.8 to 280	17 to 1700	20 (1.4)						
L/S 18	3.8	3.8 to 380	23 to 2300	15 (1.0)						
B. Easy-Load II pump heads for high-performance precision pump tubing										
L/S 15	1.7	1.7 to 170	10 to 1000	40 (2.7)						
L/S 24	2.8	2.8 to 280	17 to 1700	40 (2.7)	TR-77200-52		TR-77200-62		TR-77201-62	
L/S 35	3.8	3.8 to 380	23 to 2300	35 (2.4)						
L/S 36	4.8	4.8 to 480	29 to 2900	20 (1.4)						
C. Two-channel Easy-Load II pump heads for precision pump tubing										
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)						
L/S 14	0.21	0.21 to 21	1.3 to 130	40 (2.7)						
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)	TR-77202-50		TR-77202-60		—	—
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)						

†Actual performance varies depending on pump tubing formulation—values shown are for firm pump tubing.
‡CRS = cold-rolled steel SS = stainless steel

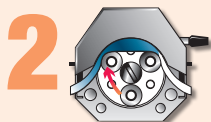
Teky's Tips



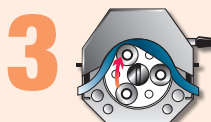
How Masterflex Pump Heads Work



1 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. The tubing behind the rollers recovers its shape, creates a vacuum, and draws fluid in 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.

Mounting Hardware for Easy-Load II Heads

Mount up to four L/S Easy-Load II pump heads on a single drive; see individual drive specifications for maximum number of heads to be mounted. Mounting hardware is stainless steel.

Heads to be mounted	Catalog number	Price/st
One	TR-77200-01	
Two	TR-77200-02	
Three	TR-77200-03	
Four	TR-77200-04	

L/S® Easy-Load® 3 Pump Heads

No tools or hardware needed

- Mount and stack heads in seconds with twist-lock mounting feature
- CRS rotor is more economical while SS offers greater durability and chemical resistance
- Mount up to four pump heads without tools or hardware when using mounting plate
- Included mounting plate adapts Easy-Load 3 pump heads to L/S drives

FEATURES

- ✓ Same side tubing entry/exit for space-limited applications
- ✓ Automatic tubing retention
- ✓ Stack up to four heads



ISO9001:2008 CERTIFIED SUPPLIER

Pump tubing sizes accepted	mL per rev	Flow rates in mL/min		Maximum system pressure† psi (bar)	Catalog number†	
		1 to 100 rpm	6 to 600 rpm		CRS rotor	SS rotor
Easy-Load 3 pump heads for precision pump tubing						
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)	TR-77800-50	TR-77800-60
L/S 14	0.22	0.22 to 22	1.3 to 130	40 (2.7)		
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)		
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)		
L/S 17	2.8	2.8 to 280	17 to 1700	20 (1.4)		
L/S 18	3.8	3.8 to 380	23 to 2300	15 (1.0)		
Easy-Load 3 pump heads for high-performance precision pump tubing						
L/S 15	1.7	1.7 to 170	10 to 1000	30 (2.0)	TR-77800-52	TR-77800-62
L/S 24	2.8	2.8 to 280	17 to 1700	30 (2.0)		
L/S 35	3.8	3.8 to 380	23 to 2300	25 (1.7)		
L/S 36	4.8	4.8 to 480	29 to 2900	20 (1.4)		
Price						

†Actual performance varies depending on pump tubing formulation—values shown are for firm pump tubing.
 †CRS = cold-rolled steel SS = stainless steel

TR-77800-00 Replacement mounting kit, for mounting Easy-Load 3 pump head to Masterflex L/S pump drives. Includes mounting plate and four screws

Wait!

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Find all the product specs you need!

L/S® Easy-Load® Pump Heads

Save time with fast tubing changes and reduced maintenance

- No need to remove head to change tubing
- PPS housing offers improved chemical resistance; SS rotor offers increased durability and chemical resistance
- Get four separate pumping channels by mounting up to four heads on one drive
- ATEX Zone 2 approved models rated to EEx II 3 G c II CT6
- Ready to use—include single-channel mounting hardware and 15" (38 cm) of silicone tubing

FEATURES

- ✓ Fixed occlusion averaged for several tubing sizes
- ✓ Stack up to four heads
- ✓ ATEX Zone 2 rated models available

ATEX Zone 2
 ISO9001:2008 CERTIFIED SUPPLIER 07516-40, -42



Pump tubing sizes accepted	mL per rev	Flow rates in mL/min		Maximum system pressure psi (bar)	Catalog number†			
		1 to 100 rpm	6 to 600 rpm		White PPS housing		Black PPS housing	ATEX-approved PPS housing
					CRS rotor	SS rotor	SS rotor	SS rotor
Easy-Load pump heads for precision pump tubing								
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)	TR-07516-00	TR-07516-10	TR-07518-60	TR-07516-40
L/S 14	0.21	0.21 to 21	1.3 to 130	40 (2.7)				
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)				
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)				
L/S 17	2.8	2.8 to 280	17 to 1700	20 (1.4)				
L/S 18	3.8	3.8 to 380	23 to 2300	15 (1.0)				
Easy-Load pump heads for high-performance precision pump tubing								
L/S 15	1.7	1.7 to 170	10 to 1000	40 (2.7)	TR-07516-02	TR-07516-12	TR-07518-62	TR-07516-42
L/S 24	2.8	2.8 to 280	17 to 1700	40 (2.7)				
Price								








PPS = polyphenylene sulfide CRS = cold-rolled steel SS = stainless steel

Mounting Hardware for Easy-Load Heads

Stack up to four L/S Easy-Load pump heads on one drive. Order mounting hardware based on number of mounted pump heads. Hardware is stainless steel.

Heads to be mounted	Catalog number	Price/st
One	TR-07013-04	
Two	TR-07013-05	
Three	TR-07013-08	
Four	TR-07013-09	

L/S® Drives Selection Guide

Description	Flow rates (mL/min)	Special features	Page number
Fixed-Speed			
	Lowest: 0.06 Highest: 290	<ul style="list-style-type: none"> ✓ Consistent repeatable flow rates ✓ Economical and compact ✓ UL, cUL, and CE listed models 	ColeParmer.com
Variable-Speed Economy Console			
	Lowest: 0.42 Highest: 2900	<ul style="list-style-type: none"> ✓ Economical variable flow ✓ Simple speed control ✓ UL, cUL, and CE listed models ✓ Accept stacked pump heads for multiple channels 	ColeParmer.com
Precision Modular			
	Lowest: 0.06 Highest: 3400	<ul style="list-style-type: none"> ✓ Separate motor and controller up to 15 ft (4.6 m) ✓ Models available with IP66-rated wall-mount controllers ✓ Pump heads can be stacked 	ColeParmer.com
Precision Variable-Speed Console			
	Lowest: 0.06 Highest: 3400	<ul style="list-style-type: none"> ✓ Economical variable flow ✓ Simple speed control ✓ ETL and CE listed ✓ Accept stacked pump heads for multiple channels ✓ Drives are stackable 	12
Variable-Speed Digital and Computer Compatible			
	Lowest: 0.001 Highest: 3400	<ul style="list-style-type: none"> ✓ Four-line graphical LCD with menu-driven programming ✓ Maintenance-free brushless motor ✓ PWM speed control with 6000:1 turndown ✓ Tachometer feedback for ±0.1% speed control ✓ Calibration capability 	13
Digital Process			
	Lowest: 0.001 Highest: 3400	<ul style="list-style-type: none"> ✓ Four-line graphical LCD with menu-driven programming ✓ Sealed housing; IP66 and NEMA 4X rated for washdown ✓ Maintenance-free brushless motor; PWM speed control ✓ Dispensing features include delay interval and cumulative volume ✓ Remote control capability 	ColeParmer.com
Digital Modular Dispensers			
	Lowest: 0.001 Highest: 3400	<ul style="list-style-type: none"> ✓ Maintenance-free brushless motor ✓ Precise repetitive dispensing with antidrip ✓ Precise PWM speed control ✓ Quiet operation ✓ Tachometer feedback for ±0.1% speed control ✓ Available with washdown wall-mount controller ✓ Calibration capability 	ColeParmer.com

L/S® Compact Variable-Speed Pumps

Make low-flow pumping easy!



- No confusing menus—easy-to-use speed controller and reversing switch get you pumping quicker
- No stress loading of tubing—new easy-loading Miniflex™ pump head with automatic tubing retention keeps tubing in place
- Easier on the budget—complete system accepts continuous tubing, no need to buy two-stop tubing
- Dual-channel model delivers synchronous flow from two separate channels

FEATURES

- ✓ Flow rates: 1.8 to 220 mL/min
- ✓ Remote start/stop via contact closure on back of pump
- ✓ Stack for smaller overall footprint

These easy-to-use complete pumps offer a wide occlusion angle, which prevents fluid backflow up to the rated pressure of the tubing. Prime or flush tubing quickly by depressing the MAX button. Self-lubricating thermoplastic polyester rollers are low friction and long wearing for smooth operation and long life.

What's included: L/S Miniflex pump head and dual-voltage (115/230 VAC) benchtop power supply.

Flow Rates in mL/min

rpm	Precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25†
Single-channel pump 77240-20				
35 to 200	1.8 to 10	6.3 to 36	21 to 118	40 to 220
Dual-channel pump 77240-30				
35 to 200	1.8 to 10	6.3 to 36	21 to 118	—

†Recommended for use with silicone or C-Flex® formulations only.

Specifications

Speed control (repeatability): ±5%	Dimensions (L x W x H): 8 5/8" x 5 1/4" x 4 1/2" (22 x 13.3 x 11.4 cm)
Reversible motor: yes	Power: 90 to 260 VAC, 50/60 Hz

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Number of channels	rpm	IP rating	Catalog number	Price
1	35 to 200	IP22	TR-77240-20	
2			TR-77240-30	

Accessories

[TR-77200-07](#) Replacement power supply, dual-voltage 115/230 VAC

[TR-17050-01](#) NIST-traceable calibration with data for peristaltic pump drive

L/S® Precision Variable-Speed Console Drives

Don't lose control of your metering applications—digital display gives you precise control

- Accurate and repeatable settings with 3-digit LED display of rpm
- Pump fluid in either direction with reversible motor—perfect for purging tubing
- Save space and increase productivity by stacking 2 or 4 pump heads on the same drive to create a multichannel pump system
- Maximize processes in a minimal footprint by stacking splash-resistant, IP33-rated drives
- Two ways to control speed, direction, and start/stop—use either the membrane keypad or remote control capabilities
- Customize for your application—drives accept nine pump head types: Standard, Easy-Load®, Easy-Load® II, Easy-Load® 3, Multichannel, High-Performance, Cartridge, PTFE-Tubing, and PTFE-Diaphragm

FEATURES

- ✓ Flow rates: 0.06 to 3400 mL/min
- ✓ Variable speed from 1 to 600 rpm
- ✓ Reversible motor accepts up to four pump heads



Stack up to 4 heads to maximize productivity in less space

Flow Rates in mL/min (flow rates in parentheses can only be obtained with the High-Performance pump head—at ColeParmer.com)

rpm	Precision pump tubing						High-performance precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18	L/S 15	L/S 24	L/S 35	L/S 36
	Standard†, Easy-Load, Easy-Load II, Easy-Load 3						Multichannel‡, Standard†, Easy-Load II, Easy-Load 3, High-Performance			
6 to 600	Cartridge, Multichannel		Cartridge		Easy-Load					
6 to 600	0.36 to 36	1.3 to 130	4.8 to 480	10 to 1000	17 to 1700	23 to 2300	10 to 1000 (11 to 1100)	17 to 1700 (18 to 1800)	23 to 2300 (26 to 2600)	29 to 2900 (34 to 3400)
1 to 100	0.06 to 6	0.21 to 21	0.8 to 80	1.7 to 170	2.8 to 280	3.8 to 380	1.7 to 170 (1.8 to 180)	2.8 to 280 (3.0 to 300)	3.8 to 380 (4.3 to 430)	4.8 to 480 (5.8 to 580)

†The Standard pump head is not available for L/S 25. ‡Multichannel head is not available for L/S 36. Multichannel and Cartridge heads are available for microbore tubing.

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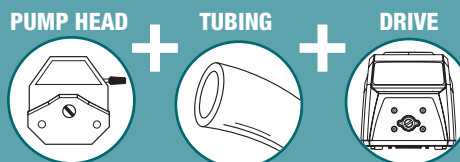
rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H) (25.4 x 21.6 x 21.6 cm)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
6 to 600	±0.25% (1 rpm at 600 rpm; 0.1 rpm at 100 rpm)	2	1/10 hp (75 W)	IP33		90 to 260	1.8 at 115 VAC, 1.2 at 230 VAC	TR-07528-10	
3 to 300		2						TR-07528-20	
1 to 100		4						TR-07528-30	

Accessories

- [TR-07595-45 Connector](#), DB9 male. Use for 4 to 20 mA remote control
- [TR-07595-47 Cable assembly](#), DB9 male connector and 25-ft (7.9-m) cable with stripped wire terminal ends. Use for remote control
- [TR-77595-35 Foot switch](#), DB9 male

- [TR-07528-80 Handheld remote controller](#); for remote control of start/stop, route tubing through handle for dispensing into containers
- [TR-17050-01 NIST-traceable calibration](#) with data for peristaltic pump drive

Choose a Complete System
One catalog number includes all 3!



System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	4.8 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Precision console drive 07528-10 6 to 600 rpm	90 to 260 VAC, 50/60 Hz	TR-77916-10	
	17 to 1700 mL/min	Easy-Load II 77200-62	C-Flex® ULTRA L/S 24 tubing 06434-24 10 ft (3 m)			TR-77916-20	

L/S® Variable-Speed Digital Drives

Versatile, worry-free operation

- Brushless, maintenance-free motor provides $\pm 0.1\%$ speed control accuracy with 6000:1 turndown ratio
- Bright graphical LCD offers easy programming, four operating modes, and seven languages
- Get more accurate dispensing with preprogrammed calibration
- Change based on your needs—drives accept all L/S pump heads for more pumping versatility
- Choose how you want to dispense: volume, copy cycles, or time
- Operate remotely via DB25 female connector

FEATURES

- ✓ Flow rates: 0.001 to 3400 mL/min
- ✓ Variable speed from 0.02 to 600 rpm
- ✓ Programmable, reversible motor accepts up to four pump heads
- ✓ Ensure dispensing accuracy with antidrip function
- ✓ Hands-free dispensing via time interval dispense cycles

Four operating modes for more functionality: continuous run, time dispense, copy dispense, and volume dispense



Flow Rates in mL/min (flow rates in parentheses can only be obtained with the High-Performance pump head—at ColeParmer.com)

rpm	Precision pump tubing						High-performance precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18	L/S 15	L/S 24	L/S 35	L/S 36
	Standard†, Easy-Load, Easy-Load II, Easy-Load 3						Multichannel‡, Standard, Easy-Load II, Easy-Load 3, High-Performance			
	Cartridge, Multichannel			Cartridge			Easy-Load			
0.1 to 600	0.006 to 36	0.021 to 130	0.08 to 480	0.17 to 1000	0.28 to 1700	0.38 to 2300	0.17 to 1000 (0.18 to 1100)	0.28 to 1700 (0.30 to 1800)	0.38 to 2300 (0.43 to 2600)	0.48 to 2900 (0.57 to 3400)
0.02 to 100	0.001 to 6	0.004 to 21	0.016 to 80	0.033 to 170	0.057 to 280	0.077 to 380	0.033 to 170 (0.036 to 183)	0.057 to 280 (0.057 to 300)	0.077 to 380 (0.086 to 433)	0.096 to 480 (0.113 to 566)

†The Standard pump head is not available for L/S® 25.

‡Multichannel head is not available for L/S 36. Multichannel and Cartridge heads are available for microbore tubing.

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rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
0.1 to 600	$\pm 0.1\%$ (0.1 rpm at 600 rpm; 0.01 rpm at 100 rpm)	2	1/10 hp (75 W)	IP33	10" x 8.5" x 8.5" (25.4 x 21.6 x 21.6 cm)	90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	TR-07522-20	
0.02 to 100		4						TR-07522-30	

Accessories

- [TR-07523-92](#) Foot switch, momentary start/stop; 6-ft (1.8-m) cable
- [TR-07523-94](#) DB25 male connector. Use to create your own cable
- [TR-07523-95](#) Cable assembly, DB25 male connector and 25 ft (7.9 m) cable with stripped wire ends for remote control

- [TR-07523-97](#) Handheld remote controller; route tubing through handle for dispensing into containers
- [TR-17050-01](#) NIST-traceable calibration with data for peristaltic pump drive

PUMP HEAD + TUBING + DRIVE












Choose a Complete System
One catalog number includes all 3!

System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.08 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Digital drive 07522-20 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	TR-77921-65	
	0.28 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)			TR-77925-75	

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

Pump tubing formulation	Description	Compatible pump head	Tubing size						
			L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18	
			Inner diameter	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)†	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			
 Silicone (platinum-cured)	<ul style="list-style-type: none"> - Complies with USP Class V, EP, FDA, REACH, RoHS, ADFC - Low protein binding, fungus resistant, phthalate and latex-free - Accommodates a wide temperature range 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load™ ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-96410-13	TR-96410-14	TR-96410-16	TR-96410-25	TR-96410-17	TR-96410-18	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
 Silicone (peroxide-cured)	<ul style="list-style-type: none"> - Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC - Greater physical compression capability - Economical, longer tubing life 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-96400-13	TR-96400-14	TR-96400-16	TR-96400-25	TR-96400-17	TR-96400-18	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
 BioPharm Silicone (platinum-cured)	<ul style="list-style-type: none"> - Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC - Low absorption; excellent biocompatibility - Very low extractable; weather, ozone, corona, radiation resistant 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-96420-13	TR-96420-14	TR-96420-16	TR-96420-25	TR-96420-17	TR-96420-18	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
 BioPharm Plus Silicone (platinum-cured)	<ul style="list-style-type: none"> - Complies with USP Class VI, EP, FDA, REACH, RoHS, ADFC - Ultra-smooth—minimizes particle entrapment - Very low extractable—ideal for lab, biotech, and pharmaceutical applications 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-96440-13	TR-96440-14	TR-96440-16	TR-96440-25	TR-96440-17	TR-96440-18	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
 Puri-Flex™	<ul style="list-style-type: none"> - Complies with USP Class VI, FDA, 3A, REACH, RoHS, ADFC - Heat sealable, weldable, and economical - Long pump life when compared to silicone or many other TPE tubings 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-96419-13	TR-96419-14	TR-96419-16	TR-96419-25	TR-96419-17	TR-96419-18	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
 C-Flex®	<ul style="list-style-type: none"> - Complies with USP Class VI, EP, REACH, RoHS, ADFC - Heat sealable, weldable, economical - Better resistance to pH fluctuations 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-06424-13	TR-06424-14	TR-06424-16	TR-06424-25	TR-06424-17	TR-06424-18	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
 C-Flex® ULTRA NEW	<ul style="list-style-type: none"> - Complies with USP Class VI, EP, REACH, RoHS, ADFC - Longest life of any C-Flex formulation - Lowest spallation and reduced residue 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	—	TR-06434-14	TR-06434-16	TR-06434-25	TR-06434-17	TR-06434-18	
			—	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
 PharMed® BPT	<ul style="list-style-type: none"> - Complies with USP Class VI, EP, FDA, NSF, REACH, RoHS - >10,000 hours of tubing life; sealable, weldable - Ideal for tissue and cell culture work 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-06508-13	TR-06508-14	TR-06508-16	TR-06508-25	TR-06508-17	TR-06508-18	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
 PharmaPure®	<ul style="list-style-type: none"> - Complies with USP Class VI, EP, FDA, REACH, RoHS - Nontoxic and nonhemolytic biocompatible - Long life even under pressure with VERY low spallation 	<ul style="list-style-type: none"> ✓ Easy-Load ✓ Easy-Load II 	TR-06435-13	TR-06435-14	TR-06435-16	TR-06435-25	TR-06435-17	TR-06435-18	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	

†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).



Tubing size	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18
Inner diameter	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) [†]	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

Pump tubing formulation	Description	Compatible pump head						
Chem-Durance® Bio 	<ul style="list-style-type: none"> Complies: USP Class VI, FDA, REACH, RoHS Excellent chemical compatibility and biocompatibility Excellent pump life and durability under pressure 	<ul style="list-style-type: none"> ✓ Easy-Load ✓ Easy-Load II 	TR-06442-13	TR-06442-14	TR-06442-16	TR-06442-25	TR-06442-17	TR-06442-18
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Solve-Flex® 	<ul style="list-style-type: none"> Complies with USP Class VI Excellent chemical resistance, especially with solvents Low spallation Fluoropolymer lined tubing 	<ul style="list-style-type: none"> ✓ Easy-Load ✓ Easy-Load II 	—	—	—	—	TR-96446-17	—
			—	3.6 m (12 ft)/pk	—			
Tygon® E-LFL 	<ul style="list-style-type: none"> Complies with USP Class VI, EP, FDA, EU Food, REACH, RoHS, ADCF Longest life of all Tygon formulations Broad chemical resistance 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-06440-13	TR-06440-14	TR-06440-16	TR-06440-25	TR-06440-17	TR-06440-18
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
Tygon E-Food (B-44-4X) 	<ul style="list-style-type: none"> Complies with FDA, EU Food, NSF, 3A, REACH, RoHS, ADCF Smooth inner surface unaffected by commercial sanitizers Nontoxic; will not affect taste or odor 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-06418-13	TR-06418-14	TR-06418-16	TR-06418-25	TR-06418-17	TR-06418-18
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Tygon E-Lab (E-3603) 	<ul style="list-style-type: none"> Complies with USP Class VI, FDA, EU Food, NSF, REACH, RoHS, ADCF Ideal for general transfer applications Nonaging, nonoxidizing, low gas permeability 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-06509-13	TR-06509-14	TR-06509-16	TR-06509-25	TR-06509-17	TR-06509-18
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Tygon Fuel & Lubricant (F-4040-A) 	<ul style="list-style-type: none"> Complies with REACH, RoHS, ADCF Specially formulated to transport hydrocarbons, petroleum products, and distillates Low gas permeability 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-06401-13	TR-06401-14	TR-06401-16	TR-06401-25	TR-06401-17	TR-06401-18
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Tygon Chemical (2001) 	<ul style="list-style-type: none"> Complies with FDA 21 CFR 175.300, REACH, RoHS, ADCF Best chemical resistance of Tygon formulations Plasticizer-free with low gas permeability 	<ul style="list-style-type: none"> ✓ Easy-Load ✓ Easy-Load II 	TR-06475-13	TR-06475-14	TR-06475-16	TR-06475-25	TR-06475-17	TR-06475-18
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Norprene® (A-60 G) 	<ul style="list-style-type: none"> Complies with NSF, REACH, RoHS Up to 10,000 hours of tubing life Excellent choice for pressure/vacuum applications 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-06404-13	TR-06404-14	TR-06404-16	TR-06404-25	TR-06404-17	TR-06404-18
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Norprene Food (A 60 F) 	<ul style="list-style-type: none"> Complies with FDA, 3A, NSF, REACH, RoHS Ideal for high-temperature food applications Resists heat, ozone, acids, and alkalis 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-06402-13	TR-06402-14	TR-06402-16	TR-06402-25	TR-06402-17	TR-06402-18
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Viton® 	<ul style="list-style-type: none"> Complies with FDA, ADCF Perfect for applications where FDA and chemical compatibility is needed Resists corrosives, solvents, and oils at elevated temperatures 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ Multichannel cartridge 	TR-96412-13	TR-96412-14	TR-96412-16	TR-96412-25	TR-96412-17	TR-96412-18
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk

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

		Flow range (approximate) [†]	L/S 15	L/S 24	L/S 35	L/S 36
Tubing size						
Inner diameter			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) [†]			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)
Pump tubing formulation	Description	Compatible pump head				
Silicone (platinum-cured) 	<ul style="list-style-type: none"> Complies with USP Class V, EP, FDA, REACH, RoHS, ADFC Low protein binding, fungus resistant, phthalate and latex-free Accommodates a wide temperature range 	<ul style="list-style-type: none"> Standard Easy-Load Easy-Load II Easy-Load 3 High-Performance 	TR-96410-15	TR-96410-24	TR-96410-35	TR-96410-36
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
Silicone (peroxide-cured) 	<ul style="list-style-type: none"> Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC Greater physical compression capability Economical, longer tubing life 	<ul style="list-style-type: none"> Standard Easy-Load Easy-Load II Easy-Load 3 High-Performance 	TR-96400-15	TR-96400-24	TR-96400-35	TR-96400-36
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
BioPharm Silicone (platinum-cured) 	<ul style="list-style-type: none"> Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC Low absorption; excellent biocompatibility Very low extractable; weather, ozone, corona, radiation resistant 	<ul style="list-style-type: none"> Standard Easy-Load Easy-Load II Easy-Load 3 High-Performance 	TR-96420-15	TR-96420-24	TR-96420-35	TR-96420-36
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
BioPharm Plus Silicone (platinum-cured) 	<ul style="list-style-type: none"> Complies with USP Class VI, EP, FDA, REACH, RoHS, ADFC Ultra-smooth—minimizes particle entrapment Very low extractable—ideal for lab, biotech, and pharmaceutical applications 	<ul style="list-style-type: none"> Standard Easy-Load Easy-Load II Easy-Load 3 High-Performance 	TR-96440-15	TR-96440-24	TR-96440-35	TR-96440-36
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
Puri-Flex™ 	<ul style="list-style-type: none"> Complies with USP Class VI, FDA, 3A, REACH, RoHS, ADFC Heat sealable, weldable, and economical Long pump life when compared to silicone or many other TPE tubings 	<ul style="list-style-type: none"> Standard Easy-Load Easy-Load II Easy-Load 3 High-Performance 	TR-96419-15	TR-96419-24	TR-96419-35	TR-96419-36
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
C-Flex® 	<ul style="list-style-type: none"> Complies with USP Class VI, EP, REACH, RoHS, ADFC Heat sealable, weldable, economical Better resistance to pH fluctuations 	<ul style="list-style-type: none"> Standard Easy-Load Easy-Load II Easy-Load 3 High-Performance 	TR-06424-15	TR-06424-24	TR-06424-35	TR-06424-36
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
C-Flex® ULTRA 	<ul style="list-style-type: none"> Complies with USP Class VI, EP, REACH, RoHS, ADFC Longest life of any C-Flex formulation Lowest spallation and reduced residue 	<ul style="list-style-type: none"> Standard Easy-Load Easy-Load II Easy-Load 3 High-Performance 	TR-06434-15	TR-06434-24	TR-06434-35	TR-06434-36
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
PharMed® BPT 	<ul style="list-style-type: none"> Complies with USP Class VI, EP, FDA, NSF, REACH, RoHS >10,000 hours of tubing life; sealable, weldable Ideal for tissue and cell culture work 	<ul style="list-style-type: none"> Standard Easy-Load Easy-Load II Easy-Load 3 High-Performance 	TR-06508-15	TR-06508-24	TR-06508-35	TR-06508-36
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
PharmaPure® 	<ul style="list-style-type: none"> Complies with USP Class VI, EP, FDA, REACH, RoHS Nontoxic and nonhemolytic biocompatible Long life even under pressure with VERY low spallation 	<ul style="list-style-type: none"> Easy-Load Easy-Load II 	TR-06435-15	TR-06435-24	—	—
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	—	—

[†]Value in () obtained by High-Performance pump head. 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).

DON'T RISK IT!



Our chemical compatibility database provides important information on chemical resistance—check it out at ColeParmer.com/ChemChart

Tubing size	L/S 15	L/S 24	L/S 35	L/S 36
Inner diameter	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)†	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)

Pump tubing formulation	Description	Compatible pump head				
Chem-Durance® Bio 	<ul style="list-style-type: none"> Complies: USP Class VI, FDA, REACH, RoHS Excellent chemical compatibility and biocompatibility Excellent pump life and durability under pressure 	<ul style="list-style-type: none"> ✓ Easy-Load ✓ Easy-Load II 	TR-06442-15	TR-06442-24	TR-06442-35	TR-06442-36
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Solve-Flex® 	<ul style="list-style-type: none"> Complies with USP Class VI Excellent chemical resistance, especially with solvents Low spallation Fluoropolymer lined tubing 	<ul style="list-style-type: none"> ✓ Easy-Load ✓ Easy-Load II 	—	TR-96446-24	—	—
			—	3.6 m (12 ft)/pk	—	—
Tygon® E-LFL 	<ul style="list-style-type: none"> Complies with USP Class VI, EP, FDA, REACH, RoHS, ADCF Longest life of all Tygon formulations Broad chemical resistance 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance 	TR-06440-15	TR-06440-24	TR-06440-35	TR-06440-36
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
Tygon E-Food (B-44-4X) 	<ul style="list-style-type: none"> Complies with FDA, NSF, 3A, and EU Food regulations (10/2011) Smooth inner surface unaffected by common commercial sanitizers Nontoxic 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance 	TR-06418-15	TR-06418-24	TR-06418-35	TR-06418-36
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Tygon E-Lab (E-3603) 	<ul style="list-style-type: none"> Complies with USP Class V, EP, FDA, REACH, RoHS, ADCF Ideal for general transfer applications Clear for easy monitoring Nontoxic, nonaging, nonoxidizing 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance 	TR-06509-15	TR-06509-24	TR-06509-35	TR-06509-36
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Tygon Fuel & Lubricant (F-4040-A) 	<ul style="list-style-type: none"> Complies with USP Class V, EP, FDA, REACH, RoHS, ADCF Ideal for transferring hydrocarbons, gasoline, kerosene, and heating oil Very low gas permeability 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance 	TR-06401-15	TR-06401-24	TR-06401-35	TR-06401-36
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Tygon Chemical (2001) 	<ul style="list-style-type: none"> Complies with USP Class V, EP, FDA, REACH, RoHS, ADCF Best chemical resistance of Tygon formulations Plasticizer-free with low gas permeability 	<ul style="list-style-type: none"> ✓ Easy-Load ✓ Easy-Load II 	TR-06475-15	TR-06475-24	—	—
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	—	—
Norprene® (A-60 G) 	<ul style="list-style-type: none"> Complies with NSF, REACH, RoHS Up to 10,000 hours of tubing life Excellent choice for pressure/vacuum applications 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance 	TR-06404-15	TR-06404-24	TR-06404-35	TR-06404-36
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Norprene Food (A 60 F) 	<ul style="list-style-type: none"> Complies with FDA, 3A, NSF, REACH, RoHS Ideal for high-temperature food applications Resists heat, ozone, acids, and alkalis 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance 	TR-06402-15	TR-06402-24	TR-06402-35	TR-06402-36
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Viton® 	<ul style="list-style-type: none"> Complies with FDA, ADCF Perfect for applications where FDA and chemical compatibility is needed Resists corrosives, solvents, and oils at elevated temperatures 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load ✓ Easy-Load II ✓ Easy-Load 3 ✓ High-Performance 	TR-96412-15	TR-96412-24	TR-96412-35	TR-96412-36
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk

I/P® Easy-Load® Pump Heads

Minimize downtime with faster tubing changes

- Optimize pressure capabilities and tubing life with adjustable occlusion
- Less maintenance and quieter operation with included tang boot
- No more loose pump heads—five-screw mounting for more secure attachment
- Adjust flow rate to your needs—can pump from 0.6 to 13 LPM
- CRS or SS rotor available. CRS rotors have sealed bearings; SS rotors have PTFE-sealed bearings



Pump tubing sizes accepted	mL per rev	Flow rates (LPM) at indicated rpm			Maximum system psi (bar)	Catalog number†			
		100	540	20 to 650		White PPS housing, CRS rotor	White PPS housing, SS rotor	Black PPS housing, SS rotor	ATEX-approved; PPS housing, SS rotor
I/P 26	6.15	0.6	3.2	0.12 to 4	40 (2.7)	TR-77602-00	TR-77602-10	TR-77601-60	TR-77602-80
I/P 73	12.3	1.2	6.8	0.2 to 8					
I/P 82	20.0	2.0	11.0	0.4 to 13	20 (1.4)				
Price									

†PPS = polyphenylene sulfide CRS = cold-rolled steel SS = stainless steel

[TR-77601-96](#) Dual-channel mounting hardware for two pump heads, stainless steel

FEATURES

- ✓ Load tubing without removing pump head from drive
- ✓ Automatic tubing retention
- ✓ Stack up to two pump heads
- ✓ ATEX Zone 2 rated model available

I/P® High-Performance Pump Heads

Get higher flow rates and pressure ratings

- Easily transfer viscous fluids
- Pump up to 19 LPM for higher volume processing
- Durable design for longer life—made of stainless steel rollers, bearings, rotor plates, and rotor shaft. Occlusion bed is made of thermoset polyester
- Compatible with I/P drives that accept two or more pump heads; pump head is not stackable



Pump tubing sizes accepted	mL per rev	Flow rates (LPM) at 20 to 650 rpm	Maximum system psi (bar)	Catalog number†	
				Polyester and SS housing, SS rotor	ATEX-approved; polyester and SS housing, SS rotor
I/P 70	12.3	0.26 to 8	40 (2.7)	TR-77600-62	TR-77600-82
I/P 88	26.2	0.4 to 17	35 (2.4)		
I/P 89	29.2	0.52 to 19	20 (1.4)		
Price					

†SS = stainless steel

FEATURES





- ✓ Easy to load tubing
- ✓ Adjustable tubing retention
- ✓ “C”-shaped design—tubing enters/exits the same side
- ✓ ATEX Zone 2 rated model available

Wait!

There's More at ColeParmer.com

Browse **100,000+** products plus find **Technical Resources** to help you choose

I/P® Drives Selection Guide

Description	Special features	Page number
Brushless Process		
	<ul style="list-style-type: none"> ✓ Compact and powerful ✓ Maintenance-free brushless motor ✓ IP55 rated 	17
Precision Variable-Speed Modular		
	<ul style="list-style-type: none"> ✓ Separate motor and controller for convenient setup ✓ Model available with wall-mount controller and IP66 protection 	ColeParmer.com
Variable-Speed Modular Digital Dispensing		
	<ul style="list-style-type: none"> ✓ Digital dispensing with calibration ✓ Separate motor and controller for convenient setup ✓ Model available with wall-mount controller and IP66 protection 	ColeParmer.com
Digital Brushless Process		
	<ul style="list-style-type: none"> ✓ Digital dispensing with calibration ✓ Sealed housing; IP66 and NEMA 4X rated for washdown ✓ Maintenance-free brushless motor 	ColeParmer.com

I/P® Brushless Process Drives

Powerful, low-maintenance drives keep you pumping

- Don't worry about moisture, chemicals, or dust—IP55-rated nonchip epoxy-coated steel housing
- Goes where you need it—compact and light enough to carry with one hand, powerful enough to drive two pump heads
- Get up to speed quickly—easy to adjust speed knob and LED display for improved repeatability



FEATURES

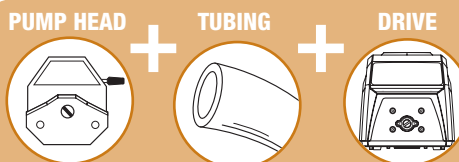
- ✓ Flow rates: 0.2 to 19 LPM
- ✓ Accuracy of ±0.25% speed control
- ✓ LED display
- ✓ Reversible motor and remote control capabilities
- ✓ Accept up to 2 pump heads





Motor speed (rpm)	Speed control (repeatability)	Pump heads accepted	Motor size	Power (50/60 Hz)		Catalog number	Price
				VAC	Amps		
Variable-speed brushless process drive; 14"L x 10"W x 9"H (35.6 x 25.4 x 22.9 cm)							
33 to 650	±0.25% (2% of max rpm)	2	1/2 hp (0.25 kW)	90 to 260	4.5 at 115 VAC, 2.6 at 230 VAC	TR-77410-10	
Variable-speed brushless process drive with remote input/output; 14"L x 10"W x 9"H (35.6 x 25.4 x 22.9 cm)							
33 to 650	±0.25% (2% of max rpm)	2	1/2 hp (0.25 kW)	90 to 260	4.5 at 115 VAC, 2.6 at 230 VAC	TR-77411-00	

[TR-07595-43](#) Washdown foot switch for model 77411-00

[TR-77300-32](#) Remote cable kit. Required for model 77411-00 to operate the remote inputs and outputs



Choose a Complete System
One catalog number includes all 3!













System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.4 to 8 LPM	Easy-Load® 77602-10	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Brushless process drive 77410-10 33 to 650 rpm	90 to 260 VAC, 50/60 Hz	TR-77963-10	
	0.7 to 17 LPM	High-Performance 77600-62	Tygon® E-LFL I/P 88 tubing 06440-88 3 ft (1 m)	Brushless process drive 77410-10 33 to 650 rpm	90 to 260 VAC, 50/60 Hz	TR-77963-20	

I/P® Precision Pump Tubing

Engineered for long life in peristaltic pumps












- Ensure optimal Masterflex® pump performance
- Custom extruded to fit Masterflex pumps
- Lot-to-lot consistency for superior accuracy and repeatability

Tubing size	I/P 26	I/P 73	I/P 82
Inner diameter	6.4 mm (0.25")	9.5 mm (0.37")	12.7 mm (0.5")
Hose barb size	6.4 mm (¼")	9.5 mm (⅜")	12.7 mm (½")
Flow range (approximate)*	0.01 to 4 LPM 0.002 to 1.1 GPM	0.01 to 8 LPM 0.002 to 2.1 GPM	0.02 to 13 LPM 0.005 to 3.5 GPM

Pump tubing formulation	Description	Compatible pump head			
Silicone (platinum-cured) 	<ul style="list-style-type: none"> – Complies with USP Class V, EP, FDA, REACH, RoHS, ADFC – Fungus-resistant; phthalate- and latex-free – Accommodates a wide temperature range 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load® 	TR-96410-26	TR-96410-73	TR-96410-82
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
Silicone (peroxide-cured) 	<ul style="list-style-type: none"> – Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC – Greater physical compression capability – Economical, longer tubing life 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load 	TR-96400-26	TR-96400-73	TR-96400-82
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
BioPharm Silicone (platinum-cured) 	<ul style="list-style-type: none"> – Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC – Lower absorption; excellent biocompatibility – Very low extractable and weather, ozone, corona, radiation resistant 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load 	TR-96420-26	TR-96420-73	TR-96420-82
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
BioPharm Plus Silicone (platinum-cured) 	<ul style="list-style-type: none"> – Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC – Ultra-smooth—minimizes particle entrapment – Very low extractable—ideal for lab, biotech pharma applications 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load 	TR-96440-26	TR-96440-73	TR-96440-82
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
Puri-Flex™ 	<ul style="list-style-type: none"> – Complies with USP Class VI, EP, REACH, RoHS, ADFC – Heat sealable, weldable, and economical – Long pump life when compared to silicone or many other TPE tubings 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load 	TR-96419-26	TR-96419-73	TR-96419-82
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
C-Flex® 	<ul style="list-style-type: none"> – Complies with USP Class VI, EP, REACH, RoHS, ADFC – Heat sealable, weldable, economical – Better resistance to pH fluctuations 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load 	TR-06424-26	TR-06424-73	TR-06424-82
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
C-Flex® ULTRA 	<ul style="list-style-type: none"> – Complies with USP Class VI, EP, REACH, RoHS, ADFC – Longest life of any C-Flex formulation – Lowest spallation and reduced residue 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load 	TR-06434-26	TR-06434-73	TR-06434-82
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
PharMed® BPT 	<ul style="list-style-type: none"> – Complies: USP Class VI, EP, FDA, NSF, REACH, RoHS – Over 10,000 hours of tubing life, sealable, weldable – Ideal for tissue and cell culture work 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load 	TR-06508-26	TR-06508-73	TR-06508-82
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
PharmaPure® 	<ul style="list-style-type: none"> – Complies with USP Class VI, EP, FDA, REACH, RoHS – Nontoxic and nonhemolytic biocompatible – Long life even under pressure with VERY low spallation 	<ul style="list-style-type: none"> ✓ Easy-Load 	TR-06435-26	TR-06435-73	TR-06435-82
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
Chem-Durance® Bio 	<ul style="list-style-type: none"> – Complies: USP Class VI, FDA, REACH, RoHS – Excellent chemical compatibility and biocompatibility – Excellent pump life, durable under pressure 	<ul style="list-style-type: none"> ✓ Easy-Load 	TR-06442-26	TR-06442-73	TR-06442-82
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk



Tubing size	I/P 26	I/P 73	I/P 82
Inner diameter	6.4 mm (0.25")	9.5 mm (0.37")	12.7 mm (0.5")
Hose barb size	6.4 mm (¼")	9.5 mm (⅜")	12.7 mm (½")
Flow range (approximate) [†]	0.01 to 4 LPM 0.002 to 1.1 GPM	0.01 to 8 LPM 0.002 to 2.1 GPM	0.02 to 13 LPM 0.005 to 3.5 GPM

Pump tubing formulation	Description	Compatible pump head			
Tygon® E-LFL 	<ul style="list-style-type: none"> Complies with USP Class VI, EP, FDA, EU Food, REACH, RoHS, ABCF Longest life of all Tygon formulations Broad chemical resistance 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load® 	TR-06440-26	TR-06440-73	TR-06440-82
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
Tygon E-Food (B-44-4X) 	<ul style="list-style-type: none"> Complies with FDA, EU Food, NSF, 3A, REACH, RoHS, ABCF Smooth inner surface unaffected by commercial sanitizers Nontoxic, will not affect taste or odor 	<ul style="list-style-type: none"> ✓ Easy-Load 	TR-06418-26	TR-06418-73	TR-06418-82
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Tygon E-Lab (E-3603) 	<ul style="list-style-type: none"> Complies with USP Class VI, FDA, EU Food, NSF, REACH, RoHS, ABCF Ideal for general transfer applications Nonaging, nonoxidizing, low gas permeability 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load 	TR-06509-26	TR-06509-73	TR-06509-82
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Tygon Fuel & Lubricant (F-4040-A) 	<ul style="list-style-type: none"> Complies with REACH, RoHS, ABCF Specially formulation to transport hydrocarbons, petroleum products, distillates Very low gas permeability 	<ul style="list-style-type: none"> ✓ Easy-Load 	—	TR-06401-73	TR-06401-82
			—	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Tygon Chemical (2001) 	<ul style="list-style-type: none"> Complies with FDA 21 CFR 175.300, REACH, RoHS, ABCF Best chemical resistance of any Tygon formulation Plasticizer-free and low gas permeability 	<ul style="list-style-type: none"> ✓ Easy-Load 	TR-06475-26	TR-06475-73	TR-06475-82
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Norprene® (A-60 G) 	<ul style="list-style-type: none"> Complies with NSF, REACH, RoHS Up to 10,000 hours of tubing life Best choice for pressure/vacuum applications 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load 	TR-06404-26	TR-06404-73	TR-06404-82
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Norprene Food (A 60 F) 	<ul style="list-style-type: none"> Complies with FDA, 3A, NSF, REACH, RoHS Ideal for high-temperature food applications Resists heat, ozone, acids, and alkalis 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load 	TR-06402-26	TR-06402-73	TR-06402-82
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
Viton® 	<ul style="list-style-type: none"> Complies with FDA, ABCF Perfect where FDA and chemical compatibility are needed Resists corrosives, solvents, and oils at elevated temperatures 	<ul style="list-style-type: none"> ✓ Standard ✓ Easy-Load 	TR-96412-26	TR-96412-73	—
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	—

[†]Determined under the following conditions: Using a 1 to 650 rpm drive; 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F).

Overlook Filler/Dispensing Nozzles

- Maximize the speed, precision, and accuracy of dispensing and filling applications
- Minimize splashing and dripping when dispensing into narrow- or wide-mouth containers
- Dimensional tolerances of ±0.05% for assured repeatability

Tubing ID	Catalog number	Price
1/32"	TR-30619-06	
1/16"	TR-30619-01	
1/8"	TR-30619-07	
3/16"	TR-30619-02	
1/4"	TR-30619-08	
5/16"	TR-30619-03	
3/8"	TR-30619-09	
1/2"	TR-30619-04	
5/8"	TR-30619-10	
3/4"	TR-30619-05	



Cole-Parmer® Digital Gear Drive with Remote Control

Easier setup and operation

NEW



- Graphical LCD shows four operating modes: continuous run, timed dispense, copy dispense, volume dispense
- Get pulse-free flow in combination with Micropump® A-mount head
- Maximize bench space by stacking up to three drives
- Control speed, direction, and more remotely via DB25 female connector on drive

Analog remote control options and simple programming make this drive ideal for automated process applications. Drive features set time interval between dispense cycles for hands-free dispensing. Batch count function counts down and displays batches completed. Cumulative volume function enables you to track total volume dispensed over multiple cycles.

What's included: 6-ft (1.8-m) line cord with IEC 320/CEE22 socket. These models are shipped with country specific plug/cord set; please specify ultimate destination when ordering.



Cole-Parmer®

Motor rpm	Motor hp	Motor type	Power VAC	Power Hz	Catalog number	Price
36 to 3600	1/10	PMDC	90 to 260	50/60	TR-75211-70	

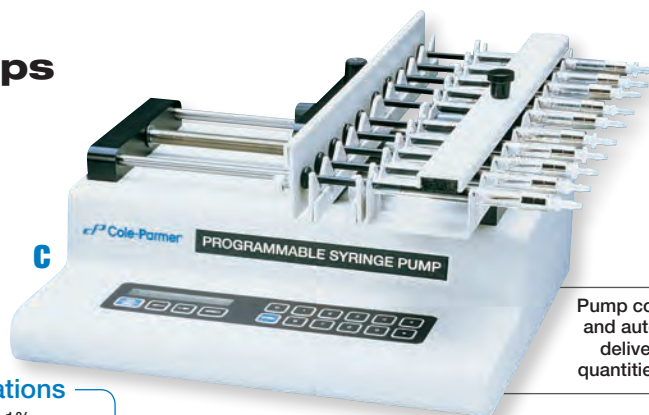
[TR-07523-92](#) Foot switch for momentary start/stop; 6-ft (1.8-m) cable

[TR-07523-94](#) Male connector, DB25. Use to create your own cable

Cole-Parmer® Syringe Pumps

Ideal for low-flow, low-pressure applications

- Backlit alphanumeric LCD guides you through setup and operating procedures
- Don't lose your settings—nonvolatile memory retains settings even after pump is turned off



Pump continuously and automatically delivers exact quantities of liquid.

Specifications

Accuracy: $\pm < 1\%$
Reproducibility: $\pm 0.1\%$

Cole-Parmer®



A. Single-Syringe Infusion Pump automatically selects display units based on syringe used, obtaining precise flow rates down to 0.2 $\mu\text{L/hr}$. A wide dynamic range (6000:1) provides excellent flexibility.

B. Multi-Syringe Pumps achieve flow rates down to 0.001 $\mu\text{L/hr}$. Easy programming via keypad—infusion/withdrawal pumps sequence operations. Control from a computer with RS-232 interface.†

C. Multi-Step Multi-Syringe Pumps allow flow rates to vary from a slow trickle to a steady stream down to 0.001 $\mu\text{L/hr}$. Program up to 8 commands and repeat up to 10 times. Pumps allow you to program flow rate hold, pause, and change of direction; each program can be run up to 12 hours. Pumps can also sequence operations. Operate your pump from a computer—great for daisy-chaining pumps!

Description	Number of syringes accepted	Flow rate per syringe	Syringe size accepted	Linear force	Power (VAC, Hz)	Catalog number	Price
A. Single-syringe pump							
Infusion	1	0.2 $\mu\text{L/hr}$ to 500 mL/hr	10 μL to 60 mL	20 lb (9.1 kg)	115, 50/60 230, 50/60	TR-74900-00 TR-74900-05	
B. Multi-syringe pumps							
Infusion	2	0.001 $\mu\text{L/hr}$ to 147 mL/min	10 μL to 140 mL	40 lb (18.1 kg)	115, 50/60	TR-74900-10	
					230, 50/60	TR-74900-15	
Infusion/withdrawal	10	0.001 $\mu\text{L/hr}$ to 147 mL/min	10 μL to 140 mL	40 lb (18.1 kg)	115, 50/60	TR-74900-30	
					230, 50/60	TR-74900-35	
Infusion/withdrawal	2	0.001 $\mu\text{L/hr}$ to 147 mL/min	10 μL to 140 mL	40 lb (18.1 kg)	115, 50/60	TR-74900-20	
					230, 50/60	TR-74900-25	
Infusion/withdrawal	10	0.001 $\mu\text{L/hr}$ to 147 mL/min	10 μL to 140 mL	40 lb (18.1 kg)	115, 50/60	TR-74900-40	
					230, 50/60		
C. Multi-step multi-syringe pumps							
Infusion	2	0.001 $\mu\text{L/hr}$ to 147 mL/min	10 μL to 140 mL	40 lb (18.1 kg)	115, 50/60	TR-74900-60	
					230, 50/60	TR-74900-65	
Infusion/withdrawal	10	0.001 $\mu\text{L/hr}$ to 147 mL/min	10 μL to 140 mL	40 lb (18.1 kg)	115, 50/60	TR-74900-80	
					230, 50/60	TR-74900-85	
Infusion/withdrawal	2	0.001 $\mu\text{L/hr}$ to 147 mL/min	10 μL to 140 mL	40 lb (18.1 kg)	115, 50/60	TR-74901-00	
					230, 50/60	TR-74901-05	
Infusion/withdrawal	10	0.001 $\mu\text{L/hr}$ to 147 mL/min	10 μL to 140 mL	40 lb (18.1 kg)	115, 50/60	TR-74901-10	
					230, 50/60	TR-74901-15	

†Order RS-232 cables separately online or call our Application Specialists.



Standard-Duty Dry Vacuum Piston Pumps

Great for filtering, aspirating, degassing, and desiccating

- Oil free for life science applications
- Water trap prevents liquid from being drawn into the pump
- Muffler provides quiet operation

Use the convenient gauge and control knob to adjust vacuum level. Single-head models also provide pressure. Avoid using pump with organic, acidic, or basic vapors.

What's included: gauge, control knob, water trap, carrying handle, suction cup feet, on/off switch, two 1/4" barbed fittings, and a 6-ft (1.8-m) cord (115 VAC models come with a standard US plug; 230 VAC models come with a European (Schuko) plug.

Service kits include all components commonly required for refurbishment.



79204-70



230 VAC models only

Free-air capacity cfm (L/min)	Ultimate† vacuum	Maximum pressure	Wetted parts	Motor hp	Noise rating	Port size (tube ID)	Power (VAC, Hz)	Catalog number	Price	Service kits	
										Catalog number	Price
Single-head pumps											
0.76 (22)	26.0" Hg (100 Torr)	100 psig (6.89 bar)	Aluminum (treated for corrosion resistance), SS, and PTFE	1/8	62 dB(A)	1/4"	115, 60	TR-79204-00		TR-79204-01	
0.67 (19)							230, 50	TR-79204-05			
1.20 (34)	27.2" Hg (70 Torr)	50 psig (3.45 bar)		1/8		1/4"	115, 60	TR-79204-10		TR-79204-11	
0.99 (28)							230, 50	TR-79204-15			
1.60 (45)	27.6" Hg (60 Torr)	100 psig (6.89 bar)		1/4		1/4"	115, 60	TR-79204-20		TR-79204-21	
1.34 (38)							230, 50	TR-79204-25			
Dual-head pumps											
2.1 (60)	29.8" Hg (5 Torr)	—	Aluminum (treated for corrosion resistance), SS, and PTFE	1/3	58 dB(A)	3/8"	115, 60	TR-79204-30		TR-79204-31	
1.8 (50)							230, 50	TR-79204-35			
7.1 (201)	27.6" Hg (60 Torr)	—		1/3		3/8"	115, 60	TR-79204-70		TR-79204-51	
5.9 (168)							230, 50	TR-79204-75			

†Ultimate total vacuum

TR-06414-20 Tygon® non-DEHP vacuum tubing, 1/4" ID x 5/8" OD. Pack of 10 ft (3.0 m)

High-Capacity Vacuum/Pressure Pumps

Won't get overloaded

- Shaded-pole fan-cooled motor has thermal overload switch to protect your pump system
- Heads on pumps 07061-60 and -05 are connected in parallel for higher capacity; heads on 07061-11 and -13 are connected in series for greater vacuum
- Select pumps with or without gauges, regulators, and valves
- Free-air capacities up to 2.2 cfm (62.3 L/min)

What's included: 6-ft (1.8-m), three-wire cord (US standard plug on 115 VAC models). Models 07061-11 and -13 include a filter/muffler.



07061-40

ISO9001:2008
CERTIFIED SUPPLIER



Pump head configuration	Free-air capacity cfm (L/min)	Max vacuum	Max pressure	Wetted parts	Motor hp	Port size	Noise rating	Power (VAC, Hz)	Catalog number	Price
Pump without gauges or regulators (order regulators separately below; order gauges with 1/4" NPT(M) connections online)										
Single	1.1 (31.2)	25.5" Hg	60 psi (4.14 bar)	Aluminum, stainless steel, Nordel®, and Nomex®	1/8	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	TR-07061-21	
	1.0 (28.3)	24.0" Hg						220/240, 50	TR-07061-22	
Pumps with gauges, regulators, and adjustable relief valve										
Single	1.1 (31.2)	25.5" Hg	60 psi (4.14 bar)	Aluminum, stainless steel, Nordel, and Nomex	1/8	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	TR-07061-40	
	1.0 (28.3)	24.0" Hg						220/240, 50	TR-07061-42	
Dual/parallel	2.2 (62.3)	25.5" Hg	60 psi (4.14 bar)		1/4			115, 60	TR-07061-60	
	1.8 (51.0)	24.0" Hg						220, 50	TR-07061-05	
Pump with vacuum gauge only										
Dual/series	1.15 (32.5)	29.0" Hg	—	Aluminum, stainless steel, Nordel, and Nomex	1/4	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	TR-07061-11	
	0.85 (24.0)	28.0" Hg						220, 50	TR-07061-13	

TR-07061-32 Pressure regulator assembly for pumps 07061-21 and -22

TR-07061-30 Vacuum regulator assembly for pumps 07061-21 and -22

TR-07061-01 Service kit for all pumps

TR-07061-03 Service kit for dual-head pumps. Pumps 07061-60, -05, -11, and -13 also require kit 07061-01 above

TR-07061-06 Diaphragm for all models, neoprene/nylon

TR-07061-04 Replacement diaphragm for all models, Nordel/Nomex

Your Complete Source for **Fluid Handling** Products



Get Pumping:

>2300 Pumps



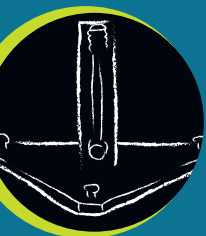
See it Through:

>170 Tubing
Formulations plus
Custom Cut Sizes



The Right Fit:

4500+ Fitting Options



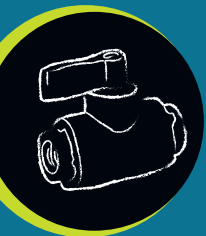
In the Flow:

More than 3200
Flowmeter Options



Pressure Relief:

Select from 3000+
Pressure Gauges



Control your Flow:

More than 1000 Valves

Masterflex® L/S® Pump page 13



easy-load® II
Masterflex® L/S™
TUBING L/S™ 13, 14, 16, 25, 17, 18
Model 77201-60

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Use only MASTERFLEX® precision tubing with MASTERFLEX pumps to ensure optimum performance. Use of other tubing may void applicable warranties.

Product Selection | Troubleshooting | And More...

Not sure what to choose?

Our expert Application Specialists can help you find the right product for your application.

800-323-4340

— or Ch@t Live —





Cole-Parmer® Silicone Tubing

No need to worry about the heat—use for applications up to 460°F



★★★★★
“Excellent hose”

Peroxide Silicone



Applications: Pharmaceutical, biotechnology, food and beverage, aerospace, and general lab applications.

Characteristics: Peroxide-cured, excellent heat resistance, low compression set, odorless, nontoxic, translucent.

Certifications: Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI requirements. Tubing is manufactured according to GMP.

Temperature range: -60 to 460°F (-51 to 238°C)

Sterilize: Autoclave or gamma irradiation.

Platinum Silicone



Applications: Pharmaceutical, biotechnology, aerospace, food and beverage, and general lab applications.

Characteristics: Platinum-cured, excellent heat resistance, low compression set, odorless, nontoxic, translucent.

Certifications: Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI. Tubing is manufactured according to GMP.

Temperature range: -58 to 446°F (-50 to 230°C)

Sterilize: Autoclave or gamma irradiation.

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20% off on 20+
15% off on 10 to 19
10% off on 4 to 9 packs



Dimensions: in. (mm)			Max psi at 70°F (21°C)	Peroxide silicone		Platinum silicone	
ID	OD	Wall		Catalog number	Price/25-ft pk	Catalog number	Price/25-ft pk
1/50 (0.5)	1/12 (2.1)	1/32 (0.8)	30	TR-06411-59		TR-95802-00	
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	30	TR-06411-60		TR-95802-01	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	15	TR-06411-62		TR-95802-02	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	15	TR-06411-63		TR-95802-03	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	10	TR-06411-64		TR-95802-04	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	20	TR-06411-67		TR-95802-05	
1/8 (3.2)	3/8 (9.6)	1/8 (3.2)	25	TR-06411-68		TR-95802-06	
5/32 (4.0)	5/32 (4.0)	1/32 (0.8)	10	TR-06411-65		TR-95802-07	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	9	TR-06411-66		TR-95802-08	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13	TR-06411-03		TR-95802-09	
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	22	TR-06411-69		TR-95802-10	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	9	TR-06411-70		TR-95802-11	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	10	TR-06411-71		TR-95802-12	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	17	TR-06411-72		TR-95802-13	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	17	TR-06411-74		TR-95802-14	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	10	TR-06411-75		TR-95802-15	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	16	TR-06411-76		TR-95802-16	
5/16 (8.0)	9/16 (14.4)	1/8 (3.2)	20	TR-06411-77		TR-95802-17	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	10	TR-06411-12		TR-95802-18	
3/8 (9.6)	5/8 (16.0)	3/32 (2.4)	12	TR-06411-78		TR-95802-19	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	15	TR-06411-79		TR-95802-20	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	9	TR-06411-80		TR-95802-21	
1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	10	TR-06411-19		TR-95802-22	
1/2 (12.8)	3/4 (19.2)	1/8 (3.2)	12	TR-06411-55		TR-95802-23	
5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	10	TR-06411-82		TR-95802-24	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	12	TR-06411-58		TR-95802-25	
3/4 (19.2)	1 (25.4)	1/8 (3.2)	9	TR-06411-83		TR-95802-26	

Tygon® BioPharm Silicone Tubing

Reduce particle entrapment with ultra-smooth inner surface



Formulation: Tygon® 3350 silicone, platinum cured.

Applications: Pharmaceutical, cosmetic, industrial, and auto-analysis applications.

Characteristics: Ultra-smooth inner surface reduces particle entrapment and minimizes bacterial growth. Good for mild to medium concentration bases, salts, and alcohols; is odorless, tasteless, and nontoxic. Transparent.

Certifications: Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI requirements, NSF criteria and EP 3.2.9 requirements. Tubing is manufactured according to GMP.

Temperature range: -112 to 392°F (-80 to 200°C)

Sterilize: Ethylene oxide, gamma irradiation, or autoclave for 30 min, 15 psi (1.0 bar).

Buy More...Save More!

20% off on 20+
15% off on 10 to 19
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 73°F (bar at 23°C)	Catalog number	Price/50-ft pk
ID	OD	Wall			
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	16 (1.1)	TR-95702-00	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	10 (0.7)	TR-95702-01	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	15 (1.0)	TR-95702-02	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	7 (0.5)	TR-95702-03	
3/32 (2.4)	7/32 (5.6)	1/16 (1.6)	12 (0.8)	TR-95702-04	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	7 (0.5)	TR-95702-05	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	9 (0.6)	TR-95702-06	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	5 (0.3)	TR-95702-08	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	7 (0.5)	TR-95702-09	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	9 (0.6)	TR-95702-10	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	5 (0.3)	TR-95702-13	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	7 (0.5)	TR-95702-14	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	5 (0.3)	TR-95702-16	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	6 (0.4)	TR-95702-17	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	4 (0.3)	TR-95702-18	
3/8 (9.6)	5/8 (14.4)	3/32 (2.4)	5 (0.3)	TR-95702-19	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	7 (0.5)	TR-95702-20	

Free Certificate of Compliance

Cole-Parmer will provide a certificate of resin or elastomer compliance FREE at your request with each order of fittings or tubing. Certificates list your company's PO number, order reference number, catalog number, formulation, compound number, lot number (where applicable), and the regulations and agencies the tubing or fitting complies with, including FDA, USP, USDA, National Formulary, NSF International, GMP, and 3A. Look for the blue "check" icon throughout this catalog to identify when a certificate of compliance is available.



Benchtop Tubing Cutter

Steel blade makes right-angle cuts in plastic tubing 1/16" to 5/8" OD.



TR-06438-10 Benchtop cutter
TR-06438-11 Replacement blade

DON'T RISK IT!

Our chemical compatibility database provides important information on chemical resistance—check it out at ColeParmer.com/ChemChart



Cole-Parmer® Platinum-Cured Reinforced Silicone Tubing

Won't crack under pressure—
withstands pressures to 312 psi



Formulation: Tygon® 3370 I. B., silicone, platinum cured.

Applications: Demanding sanitary high-pressure pharmaceutical, biotechnology, food and beverage, and cosmetic applications.

Characteristics: Excellent heat resistance, low compression set, odorless, and nontoxic, translucent.

Certifications: Elastomer is FDA-compliant (21 CFR 177.2600) and USP Class V extractables; exceeds Class VI implant; exceeds 3A Sanitary Standards; produced to Bulk Pharmaceutical cGMPs (FDA 21 CFR 210, 211). Tubing is manufactured according to GMP.

Temperature range: -60 to 320°F (-51 to 160°C)

Sterilize: Autoclave, ethylene oxide, or gamma irradiation.

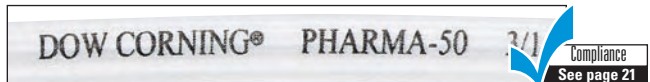
Buy More...Save More!
\$ 20% off on 20+
15% off on 10 to 19
10% off on 4 to 9 packs



Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/pk
ID	OD	Wall			
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	312 (21.5)	TR-95703-00	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	248 (17.1)	TR-95703-01	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	180 (12.4)	TR-95703-02	
1/2 (12.8)	13/16 (20.8)	5/32 (4.0)	168 (11.6)	TR-95703-03	
5/8 (16.0)	15/16 (24.0)	5/32 (4.0)	144 (9.9)	TR-95703-04	
3/4 (19.1)	1 1/8 (28.6)	3/16 (4.8)	144 (9.9)	TR-95703-05	
1 1/4 (31.8)	1 5/8 (41.4)	3/16 (4.8)	96 (6.6)	TR-95703-07	

Dow Corning® Pharma-50 Tubing

No organic additives and low extractables



Applications: Pharmaceutical, biotechnology, and ultrapure fluid processing.

Characteristics: 50 durometer, translucent platinum-cured silicone tubing with a very low extractable profile. Pharma tubing remains flexible and resilient for long service life. Dow Corning maintains complete traceability from silica to silicone tubing.

Certifications: Elastomer exceeds test guidelines for USP Class VI Plastics and the tubing itself meets or exceeds FDA (21 CFR 177.2600), 3A Sanitary Standards and European Pharmacopoeia (EP) requirements. Produced under Bulk Pharmaceutical (BP) and current GMP principles.

Temperature range: -60 to 460°F (-51 to 232°C)

Sterilize: Autoclave, ethylene oxide, or gamma irradiation.

Buy More...Save More!
\$ 20% off on 20+
15% off on 10 to 19
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 50-ft pk
ID	OD	Wall			
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	21 (1.4)	TR-96105-00	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	16 (1.1)	TR-96105-02	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	12 (0.8)	TR-96105-03	
1/4 (6.4)	7/16 (11.1)	3/32 (2.4)	17 (1.2)	TR-96105-04	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	17 (1.2)	TR-96105-05	
5/16 (8.0)	1/2 (14.0)	1/8 (3.0)	16 (1.1)	TR-96105-06	
3/8 (9.6)	9/16 (14.3)	3/32 (2.4)	13 (0.9)	TR-96105-08	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	14 (1.0)	TR-96105-09	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	10 (0.7)	TR-96105-11	
5/8 (16.0)	7/8 (22.2)	1/8 (3.2)	9 (0.6)	TR-96105-12	

Silastic® Laboratory Tubing

Resists bacteria and fungus growth



Applications: Pharmaceutical, biotech, filtration, and environmental analysis.

Characteristics: Platinum-cured silicone, nonpyrogenic, bacteria and fungus-resistant, extremely low extractables, and does not impart a taste or odor.

Certifications: Exceeds USP Class VI Plastics Test requirements, elastomer and tubing are manufactured under Bulk Pharmaceutical cGMPs in an FDA-registered, ISO-9002-certified facility.

Temperature range: -65 to 480°F (-54 to 249°C)

Sterilize: Autoclave or radiation.

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15% off on 10 to 19
10% off on 4 to 9 packs

Dimensions: in. (mm)			Catalog number	Price/ 50-ft pk
ID	OD	Wall		
0.012 (0.3)	0.025 (0.6)	0.0065 (0.2)	TR-96115-00	
0.02 (0.5)	0.037 (0.9)	0.0085 (0.22)	TR-96115-02	
0.025 (0.6)	0.047 (1.2)	0.011 (0.3)	TR-96115-04	
0.03 (0.8)	0.065 (1.7)	0.0175 (0.4)	TR-96115-06	
0.04 (1)	0.085 (2.2)	0.0225 (0.6)	TR-96115-08	
0.058 (1.5)	0.077 (2.0)	0.0095 (0.2)	TR-96115-10	
0.062 (1.6)	0.095 (2.4)	0.0165 (0.4)	TR-96115-12	
0.062 (1.6)	0.125 (3.2)	0.0315 (0.8)	TR-96115-14	
0.078 (2)	0.125 (3.2)	0.0235 (0.6)	TR-96115-16	
0.104 (2.6)	0.192 (4.9)	0.044 (1.1)	TR-96115-18	
0.132 (3.4)	0.183 (4.6)	0.0255 (0.6)	TR-96115-20	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	TR-96115-22	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	TR-96115-24	
3/16 (4.8)	3/8 (9.5)	3/32 (2.4)	TR-96115-26	
1/4 (6.4)	3/8 (9.5)	1/16 (1.6)	TR-96115-28	
1/4 (6.4)	7/16 (11.1)	3/32 (2.4)	TR-96115-30	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	TR-96115-32	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	TR-96115-34	
3/8 (9.5)	1/2 (12.8)	1/16 (1.6)	TR-96115-36	
3/8 (9.5)	9/16 (14.3)	3/32 (2.4)	TR-96115-38	
3/8 (9.5)	5/8 (15.9)	1/8 (3.2)	TR-96115-40	
1/2 (12.8)	1 1/16 (17.5)	3/32 (2.4)	TR-96115-42	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	TR-96115-44	
5/8 (15.9)	7/8 (22.2)	1/8 (3.2)	TR-96115-46	

Platinum-Cured Silicone Tubing Spools

Cut tubing to your needs

Reduce unpacking time, save money on shipping, and ensure that you always have enough tubing on hand with bulk tubing.



Dimensions in. (mm)		Length per spool	Catalog number	Price
ID	OD			
1/32 (0.8)	3/32 (2.4)	500 ft (152 m)	TR-98906-00	
1/16 (1.6)	1/8 (3.2)		TR-98906-02	
1/8 (3.2)	1/4 (6.4)	300 ft (91 m)	TR-98906-04	
3/16 (4.8)	5/16 (8.0)		TR-98906-06	
1/4 (6.4)	3/8 (9.6)		TR-98906-08	
3/8 (9.6)	5/8 (16.0)		TR-98906-10	
5/8 (16.0)	7/8 (22.4)		TR-98906-12	

Ratchet Tubing Clamps

Durable Celcon® plastic tubing clamps are autoclavable; won't rust, corrode, or distort. Twelve-position ratchet control adjusts from full flow to complete closure. Mini-clamp is suitable for up to 1/8" (2.1 mm) OD tubing. Standard clamp accepts flexible tubing to 1/2" (12.7 mm) OD.



06833-00

TR-06833-01 Mini tubing clamp. Pack of 25
TR-06833-00 Tubing clamp. Pack of 25



Dow Corning® Pharma-65 Tubing

Resilient for extended service life



Applications: High-pressure, pharmaceutical, biotechnology, and ultra-pure fluid processing.

Characteristics: 65 durometer, platinum-cured silicone tubing with a very low extractable profile; it contains no phthalates, plasticizers, latex, or other organic additives. Remains flexible and resilient for long service life. Dow Corning maintains complete traceability from silica to silicone tubing.

Certifications: Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI requirements. Meets 3A Sanitary Standards and European Pharmacopoeia (EP) requirements. Tubing is manufactured according to Bulk Pharmaceutical (BP) and current GMP.

Temperature range: -60 to 460°F (-51 to 232°C)

Sterilize: Autoclave, ethylene oxide, or gamma irradiation.

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Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/50-ft pk
ID	OD	Wall			
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	19 (1.3)	TR-96107-00	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13 (0.9)	TR-96107-01	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	15 (1.0)	TR-96107-02	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	20 (1.4)	TR-96107-04	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	19 (1.3)	TR-96107-05	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	12 (0.8)	TR-96107-06	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	11 (0.8)	TR-96107-07	
3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	13 (0.9)	TR-96107-08	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	13 (0.9)	TR-96107-09	
1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	12 (0.8)	TR-96107-10	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	11 (0.8)	TR-96107-11	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	8 (0.6)	TR-96107-12	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	7 (0.5)	TR-96107-13	



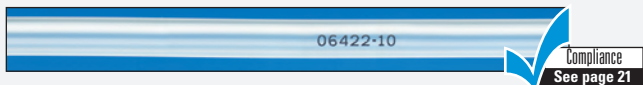
C-Flex® Tubing

Meets the demands of various industries

– Available in three formulations—standard, clear, and animal-derived component-free (ADCF)

Applications: General-purpose lab uses requiring high performance and long life.

Characteristics: Exceptional tensile and tear strength, good biocompatibility, excellent chemical resistance, low gas permeability, and a smooth surface. Standard C-Flex is opaque white; C-Flex Clear and C-Flex ADCF are clear.



Certifications: Meets USP Class VI. Tubing is manufactured according to GMP.

Temperature range: -50 to 275°F (-45 to 135°C)

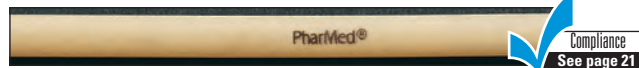
Sterilize: Autoclave, ethylene oxide, or gamma irradiation.

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Dimensions in. (mm)			C-Flex			C-Flex Clear			C-Flex ADCF		
ID	OD	Wall	Catalog number	Max psi at 70°F (21°C)	Price/25-ft pk	Catalog number	Max psi at 70°F (21°C)	Price/25-ft pk	Catalog number	Max psi at 70°F (21°C)	Price/50-ft pk
1/50 (0.5)	1/12 (2.1)	1/32 (0.8)	TR-06424-59	30		TR-06422-00	50		—	—	
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	TR-06424-60	31		TR-06422-01	51		—	—	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	TR-06424-62	15		TR-06422-02	25		—	—	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	TR-06424-63	14		TR-06422-03	23		—	—	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	TR-06424-64	10		TR-06422-04	17		—	—	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	TR-06424-67	21		TR-06422-05	35		TR-06432-50	35	
5/32 (4.0)	7/32 (5.6)	1/32 (0.8)	TR-06424-65	17		TR-06422-06	17		—	—	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	TR-06424-66	9		TR-06422-07	15		—	—	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	TR-06424-03	13		TR-06422-08	22		TR-06432-51	22	
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	TR-06424-69	22		TR-06422-09	36		—	—	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	TR-06424-71	12		TR-06422-10	20		TR-06432-53	20	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	TR-06424-72	17		TR-06422-11	28		TR-06432-54	28	
1/4 (6.4)	1/2 (12.7)	1/8 (3.2)	TR-06424-74	17		TR-06422-12	28		TR-06432-55	28	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	TR-06424-75	10		TR-06422-13	17		—	—	
5/16 (8.0)	1/2 (12.7)	3/32 (2.4)	TR-06424-76	16		TR-06422-14	27		TR-06432-56	27	
3/8 (9.6)	1/2 (12.7)	1/16 (1.6)	TR-06424-12	10		TR-06422-15	17		TR-06432-57	17	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	TR-06424-79	14		TR-06422-16	23		TR-06432-59	23	
1/2 (12.7)	11/16 (17.6)	3/32 (2.4)	TR-06424-19	10		TR-06422-17	17		TR-06432-60	17	
1/2 (12.7)	3/4 (19.1)	1/8 (3.2)	TR-06424-81	10		TR-06422-18	17		TR-06432-61	17	

PharMed® BPT Tubing

Protect your light-sensitive samples



Applications: Cell and tissue culture work and pharmaceutical uses. Also good for light-sensitive samples.

Characteristics: Nontoxic; nonhemolytic; extremely low permeability; resists acids, alkalies, oxidizing agents, and animal and vegetable oils; heat-sealable, bondable, and formable. Opaque beige.

Certifications: Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI and NSF (Standard 51) requirements. Meets EP requirements. Tubing is manufactured according to GMP.

Temperature range: -60 to 275°F (-51 to 135°C)

Sterilize: Autoclave, ethylene oxide, or gamma irradiation.

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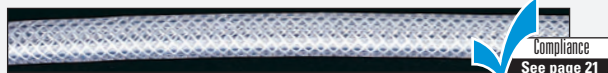
Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/25-ft pk
ID	OD	Wall			
1/50 (0.5)	9/64 (3.7)	1/16 (1.6)	50 (3.4)	TR-96880-00	
1/32 (0.8)	5/32 (4.0)	1/16 (1.6)	40 (2.8)	TR-96880-02	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	34 (2.3)	TR-96880-04	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	19 (1.3)	TR-96880-06	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13 (0.9)	TR-96880-08	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	10 (0.7)	TR-96880-10	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	19 (1.3)	TR-96880-12	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	8 (0.6)	TR-96880-14	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	13 (0.9)	TR-96880-16	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	11 (0.8)	TR-96880-18	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	8 (0.6)	TR-96880-20	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	7 (0.5)	TR-96880-22	

Microbore PharMed BPT Tubing

Dimensions: in. (mm)			Fits needle gauge	Catalog number	Price/100-ft pk
ID	OD	Wall			
0.010 (0.25)	0.082 (2.08)	0.036 (0.91)	30	TR-95809-12	
0.020 (0.51)	0.096 (2.44)	0.038 (0.97)	24	TR-95809-18	
0.035 (0.89)	0.111 (2.82)	0.038 (0.97)	20	TR-95809-26	
0.045 (1.14)	0.121 (3.07)	0.038 (0.97)	18	TR-95809-30	
0.051 (1.30)	0.127 (3.23)	0.038 (0.97)	18	TR-95809-32	
0.056 (1.42)	0.132 (3.35)	0.038 (0.97)	17	TR-95809-34	
0.060 (1.52)	0.136 (3.45)	0.038 (0.97)	16	TR-95809-36	
0.073 (1.85)	0.149 (3.78)	0.038 (0.97)	15	TR-95809-40	

Cole-Parmer® Flexible PVC Reinforced Tubing

More durable than standard PVC



Applications: For high-pressure applications, food processing, and beverage handling.

Characteristics: Good acid/alkali resistance and aging characteristics. White polyester yarn with orange tracer yarn embedded in a transparent PVC wall.

Certifications: Resin is FDA-compliant (21 CFR 170.199) and meets USDA requirements. NSF-listed (standard 51) with 3A Sanitary Standards for dairy.

Temperature range: -5 to 180°F (-21 to 82°C)

Sterilize: Ethylene oxide.



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20% off on 20+
15% off on 10 to 19
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F	Catalog number	Price/50-ft pk
ID	OD	Wall			
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	250	TR-06602-00	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	250	TR-06602-01	
3/8 (9.6)	9/16 (14.3)	3/32 (2.4)	225	TR-06602-02	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	200	TR-06602-03	
5/8 (16.0)	29/32 (23.2)	9/64 (3.6)	200	TR-06602-04	
3/4 (19.1)	1 1/32 (26.2)	1/8 (3.2)	150	TR-06602-05	
1 (25.4)	1 5/16 (33.4)	5/32 (3.8)	125	TR-06602-06	
1 1/2 (38.1)	1 15/16 (49.2)	3/16 (4.8)	100	TR-06602-08	
2 (50.8)	2 1/2 (63.6)	1/4 (6.4)	75	TR-06602-09	

Cole-Parmer® Vinyl Tubing

Ideal for routine use



Applications: General-purpose lab use.

Characteristics: Fair chemical and abrasion resistance, odorless, nontoxic and transparent.

Certifications: Tubing is manufactured according to GMP.

Temperature range: -45 to 180°F (-43 to 82°C)

Sterilize: Ethylene oxide.



Buy More...Save More!

20% off on 20+
15% off on 10 to 19
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/pk
ID	OD	Wall			
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	40 (2.8)	TR-06405-01	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	59 (4.0)	TR-06405-02	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	51 (3.5)	TR-06405-03	
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	46 (3.2)	TR-06405-04	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	51 (3.5)	TR-06405-06	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	55 (3.8)	TR-06405-07	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	64 (4.4)	TR-06405-08	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	46 (3.2)	TR-06405-09	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	55 (3.8)	TR-06405-10	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	41 (2.8)	TR-06405-12	
3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	46 (3.2)	TR-06405-15	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	55 (3.8)	TR-06405-16	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	28 (1.9)	TR-06405-18	
1/2 (12.8)	1 1/16 (17.6)	3/32 (2.4)	36 (2.5)	TR-06405-19	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	41 (2.8)	TR-06405-20	
5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	32 (2.2)	TR-06405-25	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	36 (2.5)	TR-06405-27	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	32 (2.2)	TR-06405-31	
1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	23 (1.6)	TR-06405-36	
1 1/4 (31.8)	1 3/4 (44.5)	1/4 (6.4)	41 (2.8)	TR-06405-46	

Tygon® Non-DEHP Lab Tubing

Pliable formulation for sharp radius bending



Formulation: Tygon E-3603

Applications: General lab, food & beverage, biopharm, analytical instruments.

Characteristics: Non-DEHP, phthalate free. Long-life, chemical resistant, nonoxidizing; able to bend to sharp radius curves and easily works with fittings. Transparent.

Certifications: FDA-compliant (21 CFR 175.300); meets USP Class VI and NSF 51 requirements.

Temperature range: -51 to 165°F (-46 to 74°C)

Sterilize: Autoclave or ethylene oxide.

Buy More...Save More!

20% off on 20+
15% off on 10 to 19
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/50-ft pk
ID	OD	Wall			
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	69 (4.8)	TR-06407-70	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	36 (2.5)	TR-06407-71	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	69 (4.8)	TR-06407-72	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	25 (1.7)	TR-06407-73	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	20 (1.4)	TR-06407-75	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	36 (2.5)	TR-06407-76	
3/32 (4.0)	7/32 (5.6)	1/32 (0.8)	17 (1.2)	TR-06407-77	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	25 (1.7)	TR-06407-78	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	36 (2.5)	TR-06407-79	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	20 (1.4)	TR-06407-80	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	28 (1.9)	TR-06407-81	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	35 (2.5)	TR-06407-82	
3/16 (8.0)	7/16 (11.2)	1/16 (1.6)	17 (1.2)	TR-06407-83	
3/16 (8.0)	1/2 (12.8)	3/32 (2.4)	23 (1.6)	TR-06407-84	
5/16 (8.0)	9/16 (14.4)	1/8 (3.2)	30 (2.1)	TR-06407-85	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	14 (1.0)	TR-06407-86	
3/8 (9.6)	5/16 (8.0)	3/32 (2.4)	20 (1.4)	TR-06407-87	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	25 (1.7)	TR-06407-88	
7/16 (11.2)	9/16 (14.4)	1/16 (1.6)	13 (0.9)	TR-06407-89	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	12 (0.8)	TR-06407-90	
1/2 (12.8)	1 1/16 (1.6)	3/32 (2.4)	15 (1.0)	TR-06407-91	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	20 (1.4)	TR-06407-92	
1/2 (12.8)	13/16 (20.8)	5/32 (4.0)	24 (1.7)	TR-06407-93	
5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	13 (0.9)	TR-06407-94	
5/8 (16.0)	7/8 (11.2)	1/8 (3.2)	17 (1.2)	TR-06407-95	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	14 (1.0)	TR-06407-96	
3/4 (19.1)	1 1/8 (28.6)	3/16 (4.8)	20 (1.4)	TR-06407-97	
1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	12 (0.8)	TR-06407-98	
1 (25.4)	1 1/2 (66.8)	1/4 (6.4)	20 (1.4)	TR-06407-99	

Viton® Tubing

Worry-free acid transfer



Applications: Acid and solvent transfer; high-temperature work.

Characteristics: Opaque black.

Certifications: Tubing is manufactured according to GMP.

Temperature range: 8 to 400°F (-13 to 204°C)

Sterilize: Not recommended.

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20% off on 20+
15% off on 10 to 19
10% off on 4 to 9 packs

ISO9001:2008
CERTIFIED SUPPLIER

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/25-ft pk
ID	OD	Wall			
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	23 (1.6)	TR-06434-01	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	21 (1.4)	TR-06434-02	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	19 (1.3)	TR-06434-03	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	17 (1.2)	TR-06434-04	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	20 (1.4)	TR-06434-05	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	18 (1.2)	TR-06434-06	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	16 (1.1)	TR-06434-07	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	17 (1.8)	TR-06434-08	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	15 (1.0)	TR-06434-09	



Cole-Parmer® PTFE Tubing

Won't crack under heat or pressure



Applications: Demanding lab, chemical, electrical, mechanical, pharmaceutical, and automotive applications. Good for high-purity work. PTFE tubing withstands extreme temperatures.

Characteristics: Chemically inert, nontoxic, and virtually nonporous. Excellent crack- and stress-resistance. Low coefficient of friction. Translucent.

Certifications: Resin is FDA-compliant (21 CFR 177.1550).

Temperature range: -400 to 500°F (-240 to 260°C)

Sterilize: Autoclave, ethylene oxide, or dry heat.

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20% off on 20+
15% off on 10 to 19
10% off on 4 to 9 packs



Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 25-ft pk
ID	OD	Wall			
1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	370 (25.5)	TR-06407-41	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	370 (25.5)	TR-06605-27	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	294 (20.3)	TR-06605-28	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	240 (16.5)	TR-06605-29	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	375 (25.9)	TR-06605-30	
5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	274 (18.9)	TR-06605-31	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	175 (12.1)	TR-06605-32	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	294 (20.3)	TR-06605-33	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	137 (9.4)	TR-06605-34	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	240 (16.5)	TR-06605-35	
19/64 (7.5)	3/8 (9.6)	1/25 (1.0)	143 (9.9)	TR-06605-36	
5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	113 (7.8)	TR-06605-37	
3/8 (9.6)	7/16 (11.2)	1/32 (0.8)	96 (6.6)	TR-06605-39	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	175 (12.1)	TR-06605-40	
2/5 (10.2)	1/2 (12.8)	1/20 (1.4)	137 (9.4)	TR-06605-41	
7/16 (11.2)	1/2 (12.8)	1/32 (0.8)	83 (5.7)	TR-06605-42	
1/2 (12.8)	9/16 (14.3)	1/32 (0.8)	73 (5.0)	TR-06605-44	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	137 (9.4)	TR-06605-45	
5/8 (16.0)	3/4 (19.2)	1/32 (0.8)	66 (4.6)	TR-06605-46	
5/8 (16.0)	11/16 (17.5)	1/32 (0.8)	59 (4.1)	TR-06605-48	
5/8 (16.0)	3/4 (19.2)	1/16 (1.6)	113 (7.8)	TR-06605-49	
3/4 (19.2)	7/8 (22.2)	1/16 (1.6)	96 (6.6)	TR-06605-51	

Tygon® Ultra Chemical-Resistant Tubing

Won't allow particulate build-up



Formulation: Tygon 2375

Applications: For use with highly aggressive chemicals—acids, bases, ketones, salts, and alcohols.

Characteristics: Plasticizer free, smoother inner surface (inhibits particulate build-up), hydrophobic, minimal outgassing, safe disposal via incineration, and nontoxic. Transparent.

Certification: FDA-(21 CFR 177.1550) and REACH-compliant. Meets NSF 51 Standard.

Temperature range: -108 to 130°F (-78 to 54°C)

Sterilize: Ethylene oxide or gamma irradiation.

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15% off on 10 to 19
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 50-ft pk
ID	OD	Wall			
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	33 (2.8)	TR-95630-10	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	55 (3.8)	TR-95630-11	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	22 (1.5)	TR-95630-12	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	33 (2.8)	TR-95630-13	
5/32 (4.0)	7/32 (5.5)	1/32 (0.8)	16 (1.1)	TR-95630-14	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	22 (1.5)	TR-95630-15	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	19 (1.3)	TR-95630-16	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	16 (1.1)	TR-95630-17	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	14 (1.0)	TR-95630-18	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	24 (1.6)	TR-95630-19	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	19 (1.3)	TR-95630-20	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	16 (1.1)	TR-95630-21	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	14 (1.1)	TR-95630-22	
1 (25.4)	1 1/8 (35.0)	3/16 (4.8)	15 (1.0)	TR-95630-23	

Cole-Parmer® PFA Tubing

Stands up to highly corrosive materials



Applications: Demanding lab, chemical, electrical, mechanical, pharmaceutical, and automotive applications. For the transfer of high-temperature or highly corrosive materials. Also good for high-purity work.

Characteristics: Chemically inert, nontoxic, and virtually nonporous. Excellent crack- and stress-resistance. Low coefficient of friction. Translucent.

Certifications: Resin is FDA-compliant (21 CFR 177.1550). Tubing is manufactured in ISO 9001-2008 approved facility.

Temperature range: -320 to 500°F (-195 to 260°C)

Sterilize: Autoclave, ethylene oxide, or dry heat.

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15% off on 10 to 19
10% off on 4 to 9 packs



Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 25-ft pk
ID	OD	Wall			
1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	600 (41.4)	TR-06371-00	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	592 (40.8)	TR-06375-01	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	471 (32.5)	TR-06371-01	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	385 (26.5)	TR-06371-02	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	600 (41.4)	TR-06371-21	
5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	421 (29.0)	TR-06375-02	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	280 (19.3)	TR-06371-03	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	471 (32.5)	TR-06371-22	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	220 (15.2)	TR-06371-04	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	388 (26.8)	TR-06375-05	
19/64 (7.5)	3/8 (9.6)	5/128 (1.0)	229 (15.8)	TR-06371-23	
5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	180 (12.4)	TR-06371-05	
5/16 (8.0)	7/16 (11/2)	1/16 (1.6)	324 (22.3)	TR-06371-24	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	283 (19.5)	TR-06375-07	
2/5 (10.2)	1/2 (12.8)	1/20 (1.4)	220 (9.5)	TR-06371-25	
7/16 (11/2)	1/2 (12.8)	1/32 (0.8)	133 (9.2)	TR-06371-07	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	220 (15.2)	TR-06371-26	
5/8 (16.0)	3/4 (19.0)	1/16 (1.6)	150 (10.3)	TR-06375-08	
11/16 (17.5)	3/4 (19.0)	1/32 (0.8)	87 (6.0)	TR-06371-28	
3/4 (19.0)	7/8 (22.2)	1/16 (1.6)	153 (10.5)	TR-06371-29	

Cole-Parmer® PTFE Microbore Tubing

Minimize friction, maximize chemical resistance

Use this translucent tubing in extreme temperatures and in harsh chemical environments. It's chemically inert, has low permeability, and has the lowest friction coefficient of any tubing. Temperature range is -400 to 500°F (-240 to 260°C); melts at 620°F (327°C). Tensile strength is 2500 to 4000 psi. PTFE tubing resin is UL-recognized and complies with FDA (21 CFR 177.1550) and USP Class VI requirements.



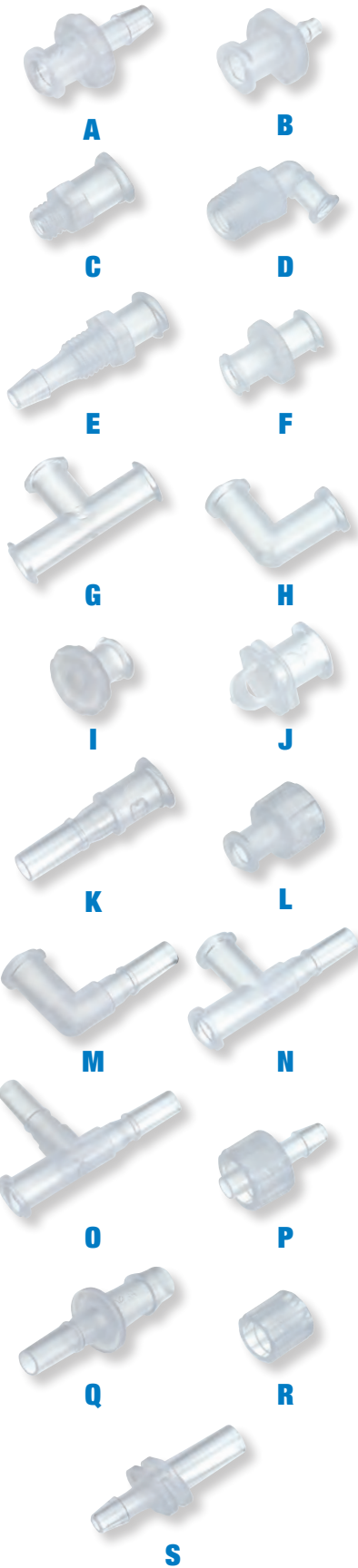
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Dimensions			Fits needle gauge	Catalog number	Price/ 100 ft
ID	OD	Wall			
Ultramicrobore PTFE tubing (finer than a human hair)					
0.002"	0.014"	0.006"	44	TR-06417-70	
0.004"	0.016"	0.006"	38	TR-06417-72	
0.006"	0.016"	0.005"	34	TR-06417-74	
0.008"	0.016"	0.004"	33	TR-06417-76	
Microbore PTFE tubing					
0.012"	0.030"	0.009"	30	TR-06417-11	
0.022"	0.042"	0.010"	24	TR-06417-21	
0.032"	0.056"	0.012"	21	TR-06417-31	
0.042"	0.066"	0.012"	18	TR-06417-41	
0.052"	0.076"	0.012"	16	TR-06417-51	

TR-06417-60 Microbore tubing assortment pack. One 100-ft (30.4-m) roll each of 06417-11, -21, -31, -41, and -51 (500-ft [152.4-m] total)



Cole-Parmer® Premium Luer Fittings

Premium luer fittings for critical applications

- Manufactured from 100% virgin raw materials in a Class 100,000 environment
- Full material traceability on all items

These luer fittings are ideal for a variety of applications, including syringes or small tubing. Manufactured in compliance with ISO 594-1 standards, these fittings are inspected to be free from contaminants, and are fully traceable. All parts meet tight dimensional tolerances for increased reliability and process purity. Choose from a range of sizes, 1/16" to 1/4", with a variety of connection options. **Pack of 25.**



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Key	Description	Polypropylene		Polycarbonate		Nylon	
		Cat. no.	Price/pk	Cat. no.	Price/pk	Cat. no.	Price/pk
Female luer x hose barb adapters							
A	Female luer x 1/16" hose barb	TR-45508-00		TR-45501-00		TR-45502-00	
	Female luer x 3/32" hose barb	TR-45508-02		TR-45501-02		TR-45502-02	
	Female luer x 1/8" hose barb	TR-30800-08		TR-45501-04		TR-45502-04	
	Female luer x 5/32" hose barb	TR-45508-06		TR-45501-06		TR-45502-06	
	Female luer x 3/16" hose barb	TR-45508-08		TR-45501-08		TR-45502-08	
	Female luer x 1/4" hose barb	TR-30800-06		TR-45501-20		TR-45502-20	
Female luer x hose barb adapters (smooth bore)							
B	Female luer x 1/16" hose barb (smooth bore)	TR-45508-50		TR-45501-50		TR-45502-50	
	Female luer x 3/32" hose barb (smooth bore)	TR-45508-52		TR-45501-52		TR-45502-52	
	Female luer x 1/8" hose barb (smooth bore)	TR-45508-54		TR-45501-54		TR-45502-54	
Female luer x thread adapters							
C	Female luer x 10-32 special tapered thread	TR-45508-70		TR-45501-70		TR-45502-70	
	Female luer x 10-32 UNF thread	TR-45508-60		TR-45501-60		TR-45502-60	
	Female luer x 1/4-28 UNF thread	TR-45508-66		TR-45501-66		TR-45502-66	
	Female luer x 1/4-28 UNF bottom sealing thread	TR-45508-76		—		TR-45505-76	
	Female luer x 1/8-27 NPT thread	TR-30800-00		—		TR-45505-78	
D	Female luer x 1/8-27 NPT thread elbow	TR-45518-80		—		TR-45505-80	
Female luer bulkhead x hose barb adapters							
E	Female luer x 1/4-28 UNF thread to 1/16" hose barb	TR-45508-30		TR-45501-30		TR-45502-30	
	Female luer x 1/4-28 UNF thread to 3/32" hose barb	TR-45508-32		TR-45501-32		TR-45502-32	
	Female luer x 1/4-28 UNF thread to 1/8" hose barb	TR-45508-34		TR-45501-34		TR-45502-34	
Female adapters							
F	Female luer x female luer	TR-45508-22		TR-45501-22		TR-45502-22	
G	Female tee	TR-45508-56		TR-45501-56		TR-45502-56	
H	Female elbow	TR-45508-26		TR-45501-26		TR-45502-26	
I	Female luer x cap	TR-30800-12		TR-45501-28		TR-45502-28	
J	Female luer x cap with tether loop	TR-45508-64		TR-45501-64		TR-45502-64	
Male x female adapters							
K	Male luer x female luer coupler	TR-45508-82		TR-45501-82		TR-45502-82	
L	Male luer x female luer coupler with lock ring	TR-45508-80		TR-45501-80		TR-45502-80	
M	Male luer x female luer elbow	TR-45508-84		TR-45501-84		TR-45502-84	
N	Male x female x female tee	TR-45508-85		TR-45501-85		TR-45502-85	
O	Male x male x female tee	TR-45508-75		TR-45501-75		TR-45502-75	
Male luer lock x hose barb adapters							
P	Male luer lock x 1/16" hose barb	TR-45518-00		TR-45504-00		TR-45505-00	
	Male luer lock x 3/32" hose barb	TR-45518-02		TR-45504-02		TR-45505-02	
	Male luer lock x 1/8" hose barb	TR-30800-24		TR-45504-04		TR-45505-04	
	Male luer lock x 5/32" hose barb	TR-45518-06		TR-45504-06		TR-45505-06	
	Male luer lock x 3/16" hose barb	TR-45518-08		TR-45504-08		TR-45505-08	
	Male luer lock x 1/4" hose barb	TR-30800-22		TR-45504-19		TR-45505-19	
Male luer x hose barb adapters (for use with separate rotating lock ring "R")							
Q	Male luer x 1/16" hose barb	TR-45518-40		TR-45504-40		TR-45505-40	
	Male luer x 3/32" hose barb	TR-45518-42		TR-45504-42		TR-45505-42	
	Male luer x 1/8" hose barb	TR-45518-44		TR-45504-44		TR-45505-44	
	Male luer x 5/32" hose barb	TR-45518-46		TR-45504-46		TR-45505-46	
	Male luer x 3/16" hose barb	TR-45518-48		TR-45504-48		TR-45505-48	
	Male luer x 1/4" hose barb	TR-45518-50		TR-45504-50		TR-45505-50	
R	Snap luer lock ring	TR-45518-74		TR-45504-74		TR-45505-74	
Male slip luer x hose barb adapters (no lock ring)							
S	Male luer x 1/16" hose barb	TR-45518-22		TR-45504-22		TR-45505-22	
	Male luer x 3/32" hose barb	TR-45518-24		TR-45504-24		TR-45505-24	
	Male luer x 1/8" hose barb	TR-45518-26		TR-45504-26		TR-45505-26	
	Male luer x 5/32" hose barb	TR-45518-28		TR-45504-28		TR-45505-28	
	Male luer x 3/16" hose barb	TR-45518-52		TR-45504-52		TR-45505-52	
	Male luer x 1/4" hose barb	TR-45518-54		TR-45504-54		TR-45505-54	



Cole-Parmer® Barbed Fittings

No tools needed for assembly

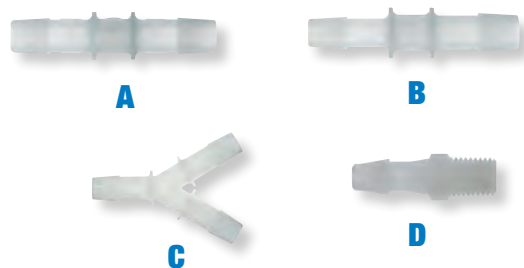
Combine these fittings with our flexible tubing for use in your low-pressure applications (less than 30 psi).

High-Density Polyethylene (HDPE). Very good chemical resistance. Temp range: -65 to 150°F (-53 to 65°C). Sterilize by ethylene oxide.

Nylon. Good chemical resistance. Temp range: -50 to 250°F (-46 to 121°C). Sterilize by ethylene oxide.

Polypropylene (PP). Very good chemical resistance. Temp range: 9 to 180°F (-13 to 66°C). Sterilize by ethylene oxide or gamma irradiation.

PVDF. Excellent chemical resistance. Temp range: -80 to 265°F (-62 to 129°C). Sterilize by ethylene oxide or autoclave.



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FREE certificate of compliance for these fittings



Fluid Handling

Fittings

Tubing ID	HDPE			Nylon			Polypropylene			PVDF		
	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk
A. Straight connectors												
1/16"	TR-30622-47	10		TR-30622-48	10		TR-40622-49	10		TR-30703-00	10	
3/32"	TR-30622-44	10		TR-30622-45	10		TR-40622-46	10		TR-30703-01	10	
1/8"	TR-30622-53	10		TR-30622-54	10		TR-41518-05	10		TR-30703-02	10	
3/16"	TR-30622-55	10		TR-30622-56	10		TR-40622-57	10		TR-30703-04	10	
1/4"	TR-30621-85	10		TR-30621-86	10		TR-40610-00	10		TR-30703-05	10	
3/8"	TR-30621-89	10		TR-30621-90	10		TR-40610-02	10		TR-30703-07	10	
1/2"	TR-30621-92	10		TR-30621-93	10		TR-40610-03	10		TR-30703-08	10	
5/8"	TR-30621-79	10		TR-30621-80	10		TR-40610-04	10		TR-30703-09	10	
3/4"	TR-30621-81	10		TR-30621-82	10		TR-40610-05	5		TR-30703-10	5	
1"	TR-30621-83	10		TR-30621-84	10		TR-40610-06	5		TR-30703-11	5	
B. Reducing connectors												
1/8" x 1/16"	TR-31518-29	10		TR-30622-22	25		TR-40622-23	25		TR-30703-41	10	
1/4" x 1/8"	TR-30622-27	10		TR-30622-28	10		TR-41518-36	10		TR-30703-50	10	
1/4" x 3/16"	TR-30622-29	10		TR-30622-30	10		TR-40622-32	10		TR-30703-52	10	
3/8" x 1/4"	TR-30622-35	10		TR-30703-99	10		TR-40610-08	10		TR-30703-54	10	
1/2" x 1/4"	TR-30622-38	10		TR-30622-39	10		TR-40610-10	10		TR-30703-56	10	
1/2" x 3/8"	TR-30622-42	10		TR-30622-43	10		TR-40610-12	10		TR-30703-58	10	
5/8" x 1/4"	TR-30621-96	10		TR-30621-97	10		TR-40610-13	10		TR-30703-59	10	
5/8" x 1/2"	TR-30622-03	10		TR-30622-04	10		TR-40610-16	10		TR-30703-62	10	
3/4" x 1/2"	TR-30622-09	5		TR-30622-10	5		TR-40610-18	5		TR-30703-64	5	
1" x 1/2"	TR-30622-15	5		TR-30622-16	5		TR-40610-20	5		TR-30703-66	5	
1" x 3/4"	TR-30622-13	5		TR-30622-14	5		TR-40610-22	5		TR-30703-68	5	
C. Y connectors												
1/16"	TR-30726-01	10		TR-30726-21	10		TR-40726-41	10		TR-30703-90	10	
3/32"	TR-30726-02	10		TR-30726-22	10		TR-40726-42	10		TR-30703-91	10	
1/8"	TR-30726-03	10		TR-30726-23	10		TR-40726-43	10		TR-30703-92	10	
3/16"	TR-30726-04	10		TR-30726-24	10		TR-40726-44	10		TR-30726-64	10	
1/4"	TR-30726-05	10		TR-30726-25	10		TR-40726-45	10		TR-30726-65	10	
3/8"	TR-30726-06	10		TR-30726-26	10		TR-40726-46	10		TR-30703-93	10	
1/2"	TR-30726-07	10		TR-30726-27	10		TR-40726-47	10		TR-30703-94	10	
5/8"	TR-30726-08	10		TR-30726-28	10		TR-40726-48	10		TR-30726-68	10	
D. NPT male threaded adapters, NPT(M) x tubing ID												
1/8" x 1/8"	TR-30621-26	10		TR-30621-27	10		TR-40621-28	25		TR-30704-07	10	
1/8" x 1/4"	TR-30621-31	10		TR-30621-32	10		TR-40610-36	10		TR-30704-09	10	
1/4" x 1/8"	TR-30621-42	10		TR-30621-44	10		TR-40621-45	10		TR-30621-43	10	
1/4" x 1/4"	TR-30621-46	10		TR-30621-47	10		TR-40610-38	10		TR-30704-11	10	
3/8" x 1/4"	TR-30621-56	10		TR-30621-57	10		TR-40610-41	10		TR-30704-14	10	
3/8" x 3/8"	TR-30621-62	10		TR-30621-63	10		TR-40610-42	10		TR-30704-15	10	
1/2" x 1/4"	TR-30621-73	10		TR-30621-74	10		TR-40610-44	10		TR-30704-17	10	
1/2" x 3/8"	TR-30621-75	10		TR-30621-76	10		TR-40610-45	10		TR-30704-18	10	
1/2" x 1/2"	TR-30621-77	10		TR-30621-78	10		TR-40610-46	10		TR-30704-19	10	
3/4" x 1/2"	TR-30621-20	10		TR-30621-21	10		TR-40610-50	5		TR-30704-23	5	
3/4" x 3/4"	TR-30621-12	10		TR-30621-13	10		TR-40610-51	5		TR-30704-24	5	
1" x 1"	TR-31517-18	10		TR-30401-34	10		TR-40610-53	5		TR-30704-26	5	

Free Certificate of Compliance

Cole-Parmer will provide a certificate of resin or elastomer compliance FREE at your request with each order of fittings, gaskets, or tubing. Certificates list your company's PO number, order reference number, catalog number, formulation, compound number, lot number (where applicable), and the regulations and agencies the fitting, tubing, or gasket complies with, including FDA, USP, USDA, National Formulary, NSF International, GMP, and 3A. Look for the blue "check" icon throughout this catalog to identify when a certificate of compliance is available.



CPC™ Plastic Quick-Disconnect Fittings

Fittings connect in a snap

- Acetal fittings are ideal for use with corrosive fluids
- Polycarbonate and polysulfone materials meet USP Class VI requirements

Simply press the thumb latch to disconnect coupling halves. Polycarbonate and polysulfone materials meet USP Class VI requirements and pass all physicochemical, cytotoxicity, leachables, and extractables tests. Order complete couplings or separate bodies and inserts from the tables below.

Note: Standard bodies and inserts fit together; won't work with large bodies and inserts and vice versa.

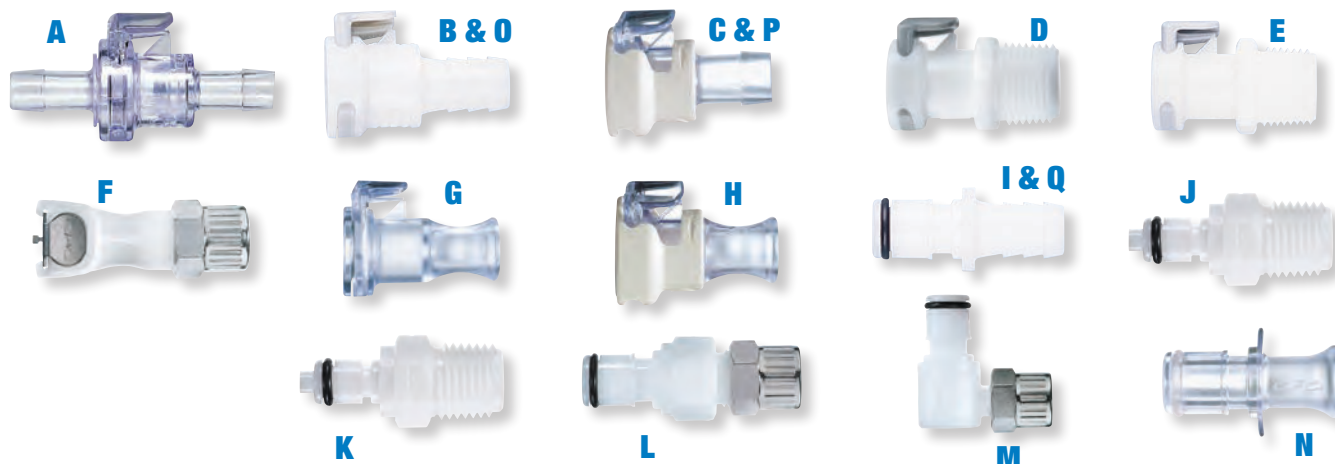


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 15% off on 50 to 99
 10% off on 10 to 49 packs

Specifications

Body material	Acetal	Polycarbonate (PC)	Polysulfone (PSF)
Temperature range	-40 to 180°F (-40 to 82°C)	-40 to 250°F (-40 to 121°C)	-40 to 300°F (-40 to 148°C)
Max pressure	120 psi	125 psi†	120 psi
Max vacuum	28" Hg	25" Hg	25" Hg
Sterilization	Autoclave or ETO	Autoclave, ETO, or gamma irradiation	Autoclave, ETO, or gamma irradiation

†Max pressure for 1/2" polycarbonate fittings is 60 psi.



Complete Couplings

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
A	TR-06360-90	1/4" tubing ID	Acetal	—	10	
	TR-31305-00		PC	—	10	
	TR-06360-91		Acetal	—	10	
	TR-31305-05	3/8" tubing ID	PC	—	10	
	TR-31306-05		PSF	—	10	

Standard Bodies and Caps

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
Barbed bodies						
B	TR-06360-94	1/4" tubing ID	Acetal	1.31" (33.3 mm)	10	
	TR-31311-11		PC		5	
	TR-31311-21		PSF		5	
	TR-06360-95	3/8" tubing ID	Acetal	1.31" (33.3 mm)	10	
	TR-31311-12		PC		5	
	TR-31311-22		PSF		5	
Hose barb coupling bodies with lock						
C	TR-31311-16	1/4" tubing ID	PC	1.31" (33.3 mm)	5	
	TR-31311-26		PSF		5	
	TR-31311-17	3/8" tubing ID	PC	1.31" (33.3 mm)	5	
	TR-31311-27		PSF		5	
BSP straight-through bodies						
D	TR-06360-01	1/4" BSP	Acetal	1.31" (33.3 mm)	10	
	TR-06360-02	3/8" BSP			10	
NPT(M) bodies						
E	TR-06360-00	1/4" NPT	Acetal	1.31" (33.3 mm)	10	
	TR-06360-06	3/8" NPT			10	
Compression coupling bodies						
F	TR-06360-06	1/4" OD	Acetal	1.31" (33.3 mm)	10	
	TR-06360-08	3/8" OD			10	
Sealing caps						
G	TR-31311-64	1/4"	PC	1.31" (33.3 mm)	5	
	TR-31311-74	1/4"	PSF		5	
Sealing caps with lock						
H	TR-31311-67	1/4"	PC	1.31" (33.3 mm)	5	
	TR-31311-77	1/4"	PSF		5	

Standard Inserts and Plugs

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
Barbed inserts						
I	TR-06360-92	1/4" tubing ID	Acetal	1.28" (32.5 mm)	10	
	TR-31311-61		PC		5	
	TR-31311-71		PSF		5	
	TR-06360-93	3/8" tubing ID	Acetal	1.28" (32.5 mm)	10	
	TR-31311-62		PC		5	
	TR-31311-72		PSF		5	
BSP straight-through inserts						
J	TR-06360-27	1/4" BSP	Acetal	1.28" (32.5 mm)	10	
	TR-06360-97	3/8" BSP			10	
NPT(M) inserts						
K	TR-06360-16	1/4" NPT	Acetal	1.28" (32.5 mm)	10	
	TR-06360-18	3/8" NPT			10	
Compression coupling inserts						
L	TR-06360-21	1/4" OD	Acetal	1.28" (32.5 mm)	10	
	TR-06360-24	3/8" OD			10	
Sealing caps						
M	TR-06360-31	1/4" OD	Acetal	1.28" (32.5 mm)	10	
	TR-06360-34	3/8" OD			10	
Plugs with lock						
N	TR-31311-68	1/4"	PC	1.20" (30.5 mm)	5	
	TR-31311-78	1/4"	PSF		5	

Large Bodies and Inserts (use these bodies and inserts together)

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
Barbed bodies						
O	TR-31311-13	1/2" tubing ID	PC	1.96" (49.8 mm)	5	
	TR-31311-23		PSF		5	
Hose barb coupling bodies with lock						
P	TR-31311-18	3/8" tubing ID	PC	1.96" (49.8 mm)	5	
	TR-31311-28		PSF		5	
Barbed inserts						
Q	TR-31311-63	1/2" tubing ID	PC	1.90" (48.3 mm)	5	
	TR-31311-73		PSF		1.40" (35.6 mm)	5



CPC™ High-Flow Quick-Disconnect Couplings

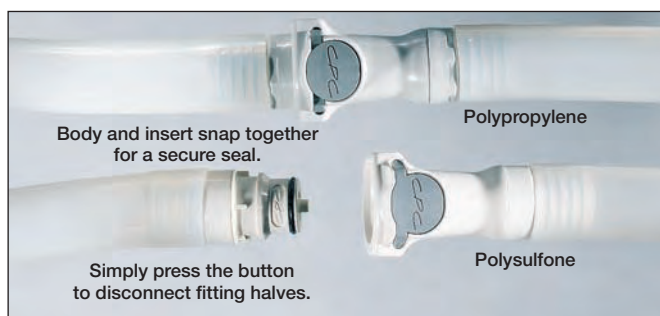
No more leaks—valved couplings automatically shut off flow

A complete quick-disconnect fitting consists of a body and an insert (order fitting halves separately). Plug insert into coupling body to connect—fitting halves lock into place immediately. To disconnect, simply press the button on the coupling body.

Valved models have a spring-operated 316 SS valve that seals the flow path when fitting halves are disengaged. All fitting bodies have 316 SS latch springs and EPDM seals.

Specifications

	Polypropylene	Polysulfone
Body material	Polypropylene	Polysulfone
Temperature range	32 to 160°F (0 to 71°C)	-40 to 280°F (-40 to 137°C)
Max pressure	60 psi	125 psi
Max vacuum	27.5" Hg	27.5" Hg
Sterilization	ETO or gamma	Autoclave, ETO, or gamma



Quick-Disconnect Bodies (Female Coupling Halves)

A. Threaded Adapter Bodies

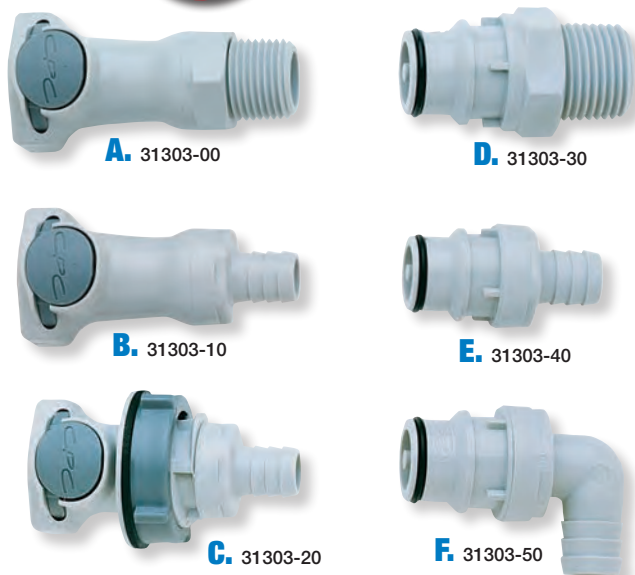
Flow size	NPT(M)	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	TR-31303-00		TR-31307-00	
3/8"	1/2"	TR-31303-01		TR-31307-01	
3/8"	3/4"	TR-31303-02		TR-31307-02	
Straight-through fittings					
3/8"	3/8"	TR-31303-05		TR-31307-05	
3/8"	1/2"	TR-31303-06		TR-31307-06	
3/8"	3/4"	TR-31303-07		TR-31307-07	

B. Hose Barb Bodies

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	TR-31303-10		TR-31307-10	
3/8"	1/2"	TR-31303-11		TR-31307-11	
3/8"	5/8"	TR-31303-12		TR-31307-12	
3/8"	3/4"	TR-31303-13		TR-31307-13	
Straight-through fittings					
3/8"	3/8"	TR-31303-15		TR-31307-15	
3/8"	1/2"	TR-31303-16		TR-31307-16	
3/8"	5/8"	TR-31303-17		TR-31307-17	
3/8"	3/4"	TR-31303-18		TR-31307-18	

C. Bulkhead Panel Mount Hose Barb Bodies

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	TR-31303-20		TR-31307-20	
3/8"	1/2"	TR-31303-21		TR-31307-21	
3/8"	5/8"	TR-31303-22		TR-31307-22	
3/8"	3/4"	TR-31303-23		TR-31307-23	
Straight-through fittings					
3/8"	3/8"	TR-31303-25		TR-31307-25	
3/8"	1/2"	TR-31303-26		TR-31307-26	
3/8"	5/8"	TR-31303-27		TR-31307-27	
3/8"	3/4"	TR-31303-28		TR-31307-28	



Quick-Disconnect Inserts (Male Coupling Halves)

D. Male Threaded Inserts

Flow size	NPT(M)	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	TR-31303-35		TR-31307-35	
3/8"	1/2"	TR-31303-36		TR-31307-36	
3/8"	3/4"	TR-31303-37		TR-31307-37	
Straight-through fittings					
3/8"	3/8"	TR-31303-30		TR-31307-30	
3/8"	1/2"	TR-31303-31		TR-31307-31	
3/8"	3/4"	TR-31303-32		TR-31307-32	

E. Hose Barb Inserts

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	TR-31303-45		TR-31307-45	
3/8"	1/2"	TR-31303-46		TR-31307-46	
3/8"	5/8"	TR-31303-47		TR-31307-47	
3/8"	3/4"	TR-31303-48		TR-31307-48	
Straight-through fittings					
3/8"	3/8"	TR-31303-40		TR-31307-40	
3/8"	1/2"	TR-31303-41		TR-31307-41	
3/8"	5/8"	TR-31303-42		TR-31307-42	
3/8"	3/4"	TR-31303-43		TR-31307-43	

F. Elbow Hose Barb Inserts

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	TR-31303-55		TR-31307-55	
3/8"	1/2"	TR-31303-56		TR-31307-56	
Straight-through fittings					
3/8"	3/8"	TR-31303-50		TR-31307-50	
3/8"	1/2"	TR-31303-51		TR-31307-51	

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Fluid Handling

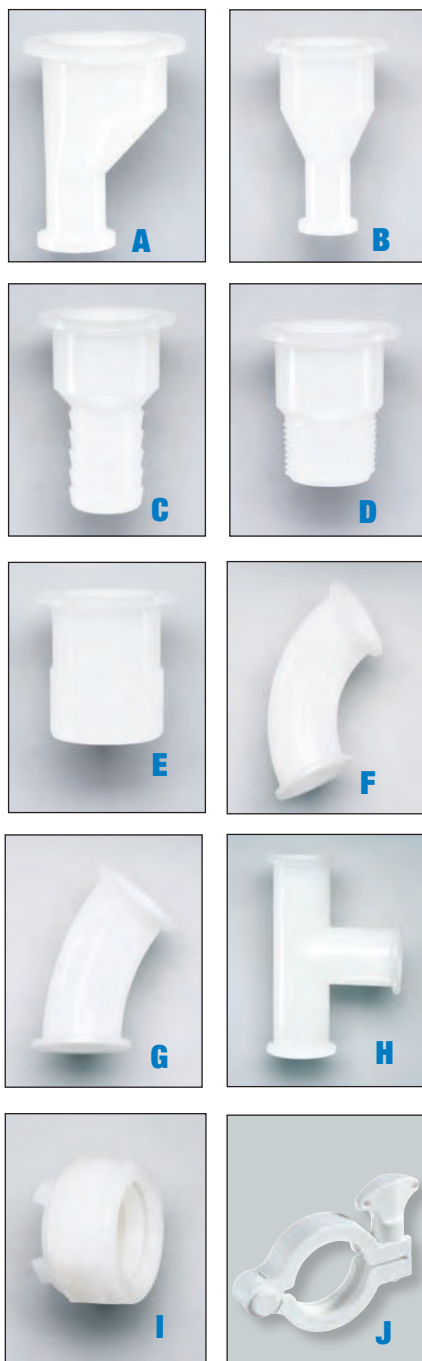
Fittings

Cole-Parmer® Polypropylene (PP) and PVDF Sanitary Clamp Fittings

Maintain sanitary conditions in your processes

- Meet USP Class VI for pharmaceutical use and FDA, USDA, and 3A standards for food contact
- All fittings are compatible with Tri-Clamp® fittings
- Excellent chemical resistance; low leachable characteristics

Note: Though both materials may be autoclaved, PVDF tolerates high temperatures better than PP does and will perform more consistently after repeated autoclaving.



Clamp size	PP		PVDF	
	Cat. no.	Price	Cat. no.	Price
A. Eccentric reducers				
1½" x ¾" mini	TR-31805-01		TR-31808-01	
B. Concentric reducers				
1" ladish x ¾" mini	TR-31805-05		TR-31808-05	
1½" x ¾" mini	TR-31805-06		TR-31808-06	
1½" x 1" ladish	TR-31805-10		TR-31808-10	
2" x 1" ladish	TR-31805-11		TR-31808-11	
2" x 1½"	TR-31805-14		TR-31808-14	
C. Barbed adapters, clamp x tubing ID				
¾" mini x ¼"	TR-31805-24		TR-31808-24	
¾" mini x ¼"	TR-31805-25		TR-31808-25	
¾" mini x ⅜"	TR-31805-26		TR-31808-26	
¾" mini x ½"	TR-31805-27		TR-31808-27	
¾" mini x ⅝"	TR-31805-28		TR-31808-28	
¾" mini x ¾"	TR-31805-29		TR-31808-29	
1" ladish x ⅛"	TR-31805-30		TR-31808-30	
1" ladish x ¼"	TR-31805-31		TR-31808-31	
1" ladish x ⅜"	TR-31805-32		TR-31808-32	
1" ladish x ½"	TR-31805-33		TR-31808-33	
1" ladish x ¾"	TR-31805-34		TR-31808-34	
1" ladish x 1"	TR-31805-35		TR-31808-35	
1½" x 1"	TR-31805-41		TR-31808-41	
2" x 1"	TR-31805-47		TR-31808-47	
D. Pipe thread adapters, clamp x NPT(M)				
1" ladish x ⅛"	TR-31805-56		TR-31808-56	
1" ladish x ¼"	TR-31805-57		TR-31808-57	
1" ladish x ⅜"	TR-31805-58		TR-31808-58	
1" ladish x ½"	TR-31805-59		TR-31808-59	
1" ladish x ¾"	TR-31805-60		TR-31808-60	
1" ladish x 1"	TR-31805-61		TR-31808-61	
1" ladish x 1¼"	TR-31805-62		TR-31808-62	
1" ladish x 1½"	TR-31805-63		TR-31808-63	
1½" x ¾"	TR-31805-68		TR-31808-68	
1½" x 1"	TR-31805-69		TR-31808-69	
1½" x 1¼"	TR-31805-70		TR-31808-70	
1½" x 1½"	TR-31805-71		TR-31808-71	
2" x 1"	TR-31805-77		TR-31808-77	
2" x 1¼"	TR-31805-78		TR-31808-78	
2" x 1½"	TR-31805-79		TR-31808-79	
2" x 2"	TR-31805-80		TR-31808-80	
E. Pipe thread adapters, clamp x NPT(F)				
1" ladish x ¾"	TR-31806-04		TR-31809-04	
1" ladish x 1"	TR-31806-05		TR-31809-05	
1½" x 1½"	TR-31806-15		TR-31809-15	
F. 90° elbows				
¾" mini	TR-31806-41		TR-31809-41	
1" ladish	TR-31806-42		TR-31809-42	
1½"	TR-31806-43		TR-31809-43	
2"	TR-31806-44		TR-31809-44	
G. 45° elbows				
¾" mini	TR-31806-51		TR-31809-51	
1" ladish	TR-31806-52		TR-31809-52	
1½"	TR-31806-53		TR-31809-53	
2"	TR-31806-54		TR-31809-54	
H. Standard tees				
¾" mini	TR-31806-61		TR-31809-61	
1" ladish	TR-31806-62		TR-31809-62	
1½"	TR-31806-63		TR-31809-63	
2"	TR-31806-64		TR-31809-64	
I. Clamps				
¾" mini	—	—	TR-31811-00	
1" and 1½"	—	—	TR-31811-01	
2"	—	—	TR-31811-02	
2½"	—	—	TR-31811-03	



Specifications

Clamp size	Inner dimension (based on SS tube ID)
¾" mini	9/16"
1" maxi	7/8"
1" ladish†	7/8"
1½"	1 1/8"
2"	1 7/8"
2½"	2 3/8"
3"	2 7/8"

†Choose 1" ladish fittings for a direct match with 1" stainless steel sanitary connections.

Chemical resistance

PP: very good PVDF: excellent

Temperature range

PP: 15 to 180°F (-9 to 82°C)
PVDF: -40 to 280°F (-40 to 138°C)

Max pressure

In ambient conditions, using plastic true union style clamp
PP: 125 psi PVDF: 150 psi

Sterilization: ETO or autoclave

J. Nylon Clamps

Clamp size	Catalog number	Price
½" to ¾"	TR-30508-21	
1" to 1½"	TR-30508-23	
2"	TR-30508-25	
3"	TR-30508-27	
4"	TR-30508-29	

Gaskets (not shown)

Gasket size	Catalog number	Price
Platinum-cured silicone		
¾" mini	TR-30548-00	
1" ladish	TR-30548-02	
1½"	TR-30548-04	
2"	TR-30548-06	
2½"	TR-30548-08	
Viton®		
¾" mini	TR-30548-20	
1" ladish	TR-30548-22	
1½"	TR-30548-24	
2"	TR-30548-26	
2½"	TR-30548-28	
Buna N		
¾" mini	TR-30548-40	
1" ladish	TR-30548-42	
1½"	TR-30548-44	
2"	TR-30548-46	
2½"	TR-30548-48	
EPDM		
¾" mini	TR-30548-60	
1" ladish	TR-30548-62	
1½"	TR-30548-64	
2"	TR-30548-66	
2½"	TR-30548-68	
PTFE		
¾" mini	TR-30548-80	
1" ladish	TR-30548-82	
1½"	TR-30548-84	
2"	TR-30548-86	
2½"	TR-30548-88	

Cole-Parmer® 316L and 304 Stainless Steel Sanitary Clamp Couplings

Meet FDA requirements and 3A Sanitary Standards



All couplings are compatible with standard 304L fittings clamps.

316L Stainless Steel Couplings are ideal for the pharmaceutical industry; they offer great chemical compatibility for use with corrosive acids and bases.

304 Stainless Steel Couplings are ideal for the food, beverage, and dairy industries; they offer good chemical compatibility and are cost effective.



Key	Clamp size	316L stainless steel		304 stainless steel	
		Catalog number	Price	Catalog number	Price
Concentric reducers					
A	1" x 3/4"	TR-30700-50		—	
	1 1/2" x 1"	TR-30700-51		TR-30700-95	
	2" x 1"	TR-30700-52		TR-30700-96	
	2" x 1 1/2"	TR-30700-53		TR-30700-97	
Eccentric reducers					
B	1" x 3/4"	TR-30700-54		—	
	1 1/2" x 1"	TR-30700-55		TR-30700-98	
	2" x 1"	TR-30700-56		TR-30700-99	
	2" x 1 1/2"	TR-30700-57		TR-30701-00	
Barbed adapters					
C	3/4" x 1/8"	TR-30700-58		—	
	3/4" x 1/4"	TR-30700-59		—	
	3/4" x 3/8"	TR-30700-60		—	
	3/4" x 1/2"	TR-30700-61		—	
	3/4" x 3/4"	TR-30700-62		—	
	1" x 1"	TR-30700-63		TR-30800-50	
	1 1/2" x 1 1/2"	TR-30700-64		TR-30800-51	
	2" x 2"	TR-30700-65		TR-30800-52	
Threaded adapters, clamp x NPT(M)					
D	3/4" x 1/8"	TR-30700-66		—	
	3/4" x 1/4"	TR-30700-67		—	
	3/4" x 3/8"	TR-30700-68		—	
	3/4" x 1/2"	TR-30700-69		—	
	3/4" x 3/4"	TR-30700-70		—	
	1" x 3/4"	TR-30700-71		TR-30800-53	
	1" x 1"	TR-30700-72		TR-30800-54	
	1" x 1 1/2"	TR-30700-74		TR-30800-55	
	1" x 2"	TR-30700-75		TR-30800-56	
	1 1/2" x 3/4"	TR-30700-76		TR-30800-57	
	1 1/2" x 1"	TR-30700-77		TR-30800-58	
	1 1/2" x 1 1/4"	TR-30700-78		TR-30800-59	
	1 1/2" x 1 1/2"	TR-30700-79		TR-30800-60	
	1 1/2" x 2"	—		TR-30800-61	
90° elbows					
E	3/4"	TR-30700-80		—	
	1"	TR-30700-81		TR-30800-62	
	1 1/2"	TR-30700-82		TR-30800-63	
	2"	TR-30700-83		TR-30800-64	
45° elbows					
F	3/4"	TR-30700-84		—	
	1"	TR-30700-85		TR-30800-65	
	1 1/2"	TR-30700-86		TR-30800-66	
	2"	TR-30700-87		TR-30800-67	
Tees					
G	3/4"	TR-30700-88		—	
	1"	TR-30700-89		TR-30800-68	
	1 1/2"	TR-30700-90		TR-30800-69	
	2"	TR-30700-91		TR-30800-70	
Crosses					
H	1"	TR-30700-92		TR-30800-71	
	1 1/2"	TR-30700-93		TR-30800-72	
	2"	TR-30700-94		TR-30800-73	
Clamps					
I	1/2" to 3/4"	—		TR-30800-74	
	1" to 1 1/2"	—		TR-30800-75	
	2"	—		TR-30800-76	
	2 1/2"	—		TR-30800-77	
	3"	—		TR-30800-78	
	4"	—		TR-30800-80	



A



B



C



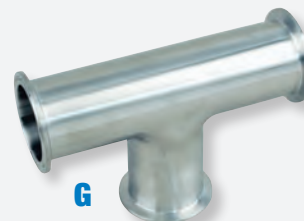
D



F



E



G



H



I

Fluid Handling

Fittings

Cole-Parmer® Syringe Filters

Get easy, reliable filtration—just slip on and twist

- Easy identification—membrane type and pore size printed on each filter
- Filter more confidently—filters are 100% integrity tested and manufactured in accordance with ISO 9002 standards
- Get a secure fit—bidirectional membrane support and luer lock inlet/outlet
- Sterile filters are sterilized by gamma irradiation and certified nonpyrogenic, noncytotoxic, and blister packed

Glass Prefilters with Final Filter

- Save time—borosilicate glass fiber prefilter and cellulose filter in one
- Prefilter extends life of final filter by removing particulates from sample
- Reduces retention volume and sample loss



Membrane Type	Dia	Pore size	Housing	Retention volume	Qty/ bx	Catalog number	Price/ bx
Nonsterile filters							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	100	TR-02915-90	
		0.45 µm				TR-02915-92	
		0.80 µm				TR-02915-94	
Sterile filter							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	50	TR-02915-40	

Cellulose Acetate Filters

- Low protein binding—ideal for biological solutions
- Use for sterilization and clarification of aqueous solutions



Pore size	Membrane dia	Housing	Color	Qty/bx	Catalog number	Price/bx
Nonsterile filters						
0.22 µm	26 mm	Acrylic	Blue	100	TR-02915-60	
0.45 µm			Clear		TR-02915-58	
0.80 µm			Green		TR-02915-62	
Sterile filters						
0.22 µm	26 mm	Acrylic	Blue	50	TR-02915-12	
0.45 µm			Clear		TR-02915-00	
0.80 µm			Green		TR-02915-10	

Nylon Filters

- Low levels of extractables with no wetting agents
- Hydrophilic nylon for good chemical resistance—ideal for aqueous and most organics



Pore size	Membrane dia	Housing	Color	Qty/bx	Catalog number	Price/bx
Nonsterile filters						
0.22 µm	25 mm	PP	Natural	100	TR-02915-16	
0.45 µm					TR-02915-14	
Sterile filters						
0.20 µm	25 mm	PP	Red	50	TR-02915-04	
0.45 µm			Natural		TR-02915-02	



Teky's Tips

Choose the Right Filter!

Membrane type	Applications
Glass prefilter	One-step prefiltration and filtration. Choose the final membrane to meet your application needs. High particle loading capacity.
Cellulose acetate	Sterilization and clarification of aqueous solutions. Low protein binding.
Nylon	Filtration of organic and aqueous solutions. Low extractables.
PTFE	Sterilization of gases and alcohols; cleaning acids, alkalis, and organic solvents; venting purposes. For aggressive chemicals.
Nitrocellulose	High protein retention; microbiological analysis, waste water treatment; sterilization of aqueous solutions.

Specifications

Membrane dia	Housing type	Sample volume	Retention volume ^f	Pressure limit at 25°C	Max temp	Effective filtration area
15 mm	PP	≤5 mL	10 µL	87 psi	127°C	1.7 cm ²
25 mm	PP	≤100 mL	0.1 mL	87 psi	127°C	4.8 cm ²
26 mm	Acrylic	≤100 mL	0.1 mL	87 psi	50°C	5.3 cm ²
50 mm	PP	≤2 L	0.5 mL	60 psi	134°C	20 cm ²

^fVaries for glass prefilters; see glass prefilter table below.

PTFE Filters

- Ideal for aggressive chemicals—organic solvents, concentrated acids and bases, propellants and more
- Use for gas/air filtration
- 50-mm membranes have stepped hose barb connectors for 1/4" to 1/2" ID tubing



Pore size	Membrane dia	Housing	Color	Qty/bx	Cat. no.	Price/bx
Nonsterile filters						
0.20 µm	15 mm	PP	Natural	100	TR-29550-08	
0.45 µm					TR-29550-10	
0.20 µm	25 mm	PP	Natural	100	TR-02915-20	
0.45 µm					TR-02915-22	
0.20 µm	50 mm	PP	Natural	20	TR-02915-28	
0.45 µm					TR-02915-30	
Sterile filters						
0.20 µm	25 mm	PP	Natural	50	TR-02915-08	
0.50 µm					TR-02915-06	

Nitrocellulose Filters

- Good for macromolecules—highest protein retention
- Get fast flow rates with aqueous solutions
- Ideal for microbiological analysis, waste water treatment, and sterilization of aqueous solutions



Pore size	Membrane dia	Housing	Color	Qty/bx	Cat. no.	Price/bx
Nonsterile filter						
0.20 µm	26 mm	Acrylic	Blue	100	TR-02915-56	
Sterile filters						
0.20 µm	26 mm	Acrylic	Blue	50	TR-02915-52	
0.45 µm					TR-02915-53	

Advantec® Pressure Filtration Holders

Stainless steel type 304 or 316 minimizes resistance and maximizes flow rate

– Model 02933-00 meets EPA specifications for EPA Hazardous Waste Toxicity Test

Pressure filtration holders maximize flow rates by applying positive pressure to the fluid over a broad membrane surface. Holders are autoclavable with one filter membrane that is sealed with removable wing nuts. All holders vent to release pressure.

Holders have PTFE gaskets, silicone O-rings, and PTFE-coated photoetched stainless steel support screens† to prevent nitrocellulose membranes from sticking. Holders process samples from an in-line system or pressure vessel. Available in stainless steel, stainless steel with a reservoir, and sanitary stainless steel.

Stainless Steel Holders are available in the following sizes: 90, 142, and 293 mm.

Stainless Steel Holders with Reservoir let you filter samples without a separate pressure-dispensing vessel. The 47-mm holder has a 200-mL capacity, the 90-mm holder has a 750-mL capacity, and the 142-mm holders have a 1500-mL capacity.

Sanitary Stainless Steel Holders are best used in-line to filter-sterilize liquids or gases. Sanitary inlet and outlet connections can be completely disassembled for thorough cleaning. Filter from 20 to 100 liters with our model 29900-00 pressure holder. Top plate has knobs for easy positioning over membrane.

Holder material	Filter dia	Prefilter dia	Filtration area	Max pressure psi (bar)	Included adapter size (mm ID)	Dimensions (H x dia)	Catalog number	Price
Stainless steel holders								
304 SS 316 SS	90 mm	75 mm	45.3 cm ²	100 (7)	¾" NPT†† to 11	13½" x 5¼" (34.3 x 13.3 cm)	TR-02926-50† TR-29902-06	
304 SS 316 SS	142 mm	124 mm	113.0 cm ²	100 (7)	¾" NPT†† to 11	16¾" x 7¼" (42.5 x 18.4 cm)	TR-02927-50 TR-29900-02	
304 SS 316 SS	293 mm	257 mm	530.0 cm ²	100 (7)	¾" NPT†† to 16	16" x 14" (40.6 x 35.6 cm)	TR-29900-04 TR-02930-00	
Stainless steel holders with reservoir								
304 SS	47 mm	35 mm	12.5 cm ²	71 (4.9)	¼" NPT(F) to 10	14¼" x 2¾" (36.2 x 7 cm)	TR-02926-32	
304 SS 316 SS	90 mm	75 mm	45.0 cm ²	71 (4.9)	Inlet: ¼" NPT(F) to 7–13 Outlet: ¾" NPT(F) to 11	17¾" x 5¼" (44 x 13.3 cm)	TR-02926-54 TR-29902-68	
304 SS 316 SS	142 mm	124 mm	113.0 cm ²	71 (4.9)	Inlet: ¼" NPT(F) to 7–13 Outlet: ¾" NPT(F) to 11	23" x 7¼" (58.4 x 18.4 cm)	TR-02927-00‡ TR-02933-00‡	
Sanitary stainless steel holders								
316 SS	90 mm	75 mm	45.0 cm ²	100 (7)	½" sanitary to 11	14" x 5¼" (35.6 x 13.3 cm)	TR-29900-00	
304 SS 316 SS	142 mm	124 mm	113.0 cm ²	100 (7)	½" sanitary to 11	16¾" x 7¼" (42.5 x 18.4 cm)	TR-29900-06 TR-29900-05	
304 SS 316 SS	293 mm	257 mm	530.0 cm ²	100 (7)	1½" sanitary to 11	16" x 14" (40.6 x 35.6 cm)	TR-29900-08 TR-29900-10	

†Model 02926-50 has a 304 SS support screen. ‡Meets specifications for EPA Hazardous Waste Toxicity Test.
††Includes one NPT(M) adapter and one NPT(F) adapter.



Sanitary holders feature connections that completely disassemble for easy cleaning.



90-mm pressure holder with reservoir 02926-54

Fluid Handling

Filtration

Advantec® Mixed Cellulose Ester Membranes

High quality at low prices

– Made from over 90% cellulose nitrate for strength and thermostability

These MCE membranes can be exposed to temperatures up to 266°F (130°C). Can be used for many laboratory applications including filter sterilizing biological fluids, microbiology, contamination analysis, and air monitoring.



Pore size (µm)	Bubble point (psi)	Flow (L/min/cm ²)		13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)		293 mm (25/pk)	
		H ₂ O†	Air	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.10	35.3	0.027	0.67	TR-06639-25		TR-06639-28		TR-06639-31		TR-06639-34		TR-06639-41		TR-36230-81	
0.20	54.5	0.018	2.4	TR-06639-01		TR-06639-05		TR-06639-13		TR-06639-35		TR-06639-17		TR-36230-82	
0.45	35.0	0.045	3.7	TR-06639-02		TR-06639-06		TR-06639-14		TR-06639-36		TR-06639-18		TR-36230-83	
0.80	16.4	0.165	15.0	TR-06645-30		TR-06645-32		TR-06645-34		TR-06645-36		TR-06645-38		TR-36230-84	
1.00	13.9	0.220	20.4	TR-06639-47		TR-06639-49		TR-06639-51		TR-06639-55		TR-06639-53		TR-36230-85	
3.00	10.2	0.300	28.3	TR-06639-26		TR-06639-29		TR-06639-32		TR-06639-39		TR-06639-42		TR-36230-86	
5.00	8.5	0.400	40.9	TR-06639-27		TR-06639-30		TR-06639-33		TR-06639-40		TR-06639-43		TR-36230-87	

†Using water prefiltered to 0.1 µm at 10 psi.

Cole-Parmer® Acrylic Variable-Area Flowmeters for Bench or Panel Mount

Don't sacrifice durability for precision

- Easily and precisely control flow of your application via manual valve
- Durable acrylic bodies with integral metering tubes for accurate readings
- Stand up to even aggressive plant environments
- Versatile—easy panel installation or move from bench to bench with optional tripod base 32462-50 (order separately at ColeParmer.com)



32461-60 flowmeter shown on tripod base 32462-50

Specifications

Accuracy:
2" and 50-mm models: ±5% FS
4" and 100-mm models: ±3% FS
5" and 127-mm models: ±2% FS

Max operating temp: 150°F (65°C)

Connections:
2", 4", 50-mm, and 100-mm models: 1/8" NPT(F)†
5" and 127-mm models: 1" NPT(F)

Media type: liquids or gases

Max pressure: 100 psi (6.9 bar)

Materials of construction

Part	2" and 50 mm	4" and 100 mm	5" and 127 mm
Body	Acrylic		
Fittings	Brass		PVC
O-rings	Buna N		
Floater	Black glass (BG), Aluminum (AL)	316 Stainless steel (SS)	

Flowmeters with Valves; English-Unit Scale

Float†	For liquid applications			For air applications		
	Flow range	Cat. no.	Price	Flow range	Cat. no.	Price
Flowmeters with 2" scale						
BG	0.2–2 GPH	TR-32460-00		0.1–1 scfh	TR-32460-10	
SS	0.4–5 GPH	TR-32460-02		0.2–2 scfh	TR-32460-12	
BG	1–10 GPH	TR-32460-04		0.4–5 scfh	TR-32460-14	
SS	2–20 GPH	TR-32460-06		0.5–10 scfh	TR-32460-16	
SS	4–40 GPH	TR-32460-08		2–20 scfh	TR-32460-18	
SS	—	—		3–30 scfh	TR-32460-20	
BG	—	—		4–50 scfh	TR-32460-22	
SS	—	—		10–100 scfh	TR-32460-24	
SS	—	—		20–200 scfh	TR-32460-26	
Flowmeters with 4" scale						
SS	1–10 GPH	TR-32461-00		0.4–5 scfh	TR-32461-10	
SS	2–25 GPH	TR-32461-02		1–10 scfh	TR-32461-12	
SS	4–50 GPH	TR-32461-04		2–20 scfh	TR-32461-14	
SS	6–60 GPH	TR-32461-06		4–40 scfh	TR-32461-16	
SS	0.2–2.5 GPM	TR-32461-07†		10–100 scfh	TR-32461-18	
SS	0.4–5 GPM	TR-32461-08†		14–150 scfh	TR-32461-20	
SS	—	—		20–200 scfh	TR-32461-22	
AL	—	—		0.5–5 scfm	TR-32461-24†	
SS	—	—		1–10 scfm	TR-32461-26†	
Flowmeters with 5" scale						
SS	1–10 GPM	TR-32466-50		3–25 scfm	TR-32466-60	
SS	2–20 GPM	TR-32466-52		4–50 scfm	TR-32466-62	

†These models have dual scale: GPM/GPH, scfm/scfh, LPM/LPH; they also have 1/4" NPT(F) connections and use optional tripod base 32462-60 sold separately online.
‡Float material key: BG = black glass, SS = stainless steel, AL = aluminum.

Flowmeters without Valves; English-Unit Scales

Float†	For liquid applications			For air applications		
	Flow range	Cat. no.	Price	Flow range	Cat. no.	Price
Flowmeters with 4" scale						
SS	1–10 GPH	TR-32458-00		0.4–5 scfh	TR-32458-10	
SS	—	—		0.5–5 scfm	TR-32458-24†	
SS	—	—		1–10 scfm	TR-32458-26†	
Flowmeters with 5" scale						
SS	0.4–5 GPM	TR-32462-00		3–25 scfm	TR-32458-10	
SS	2–20 GPM	TR-32462-04		10–100 scfm	TR-32458-14	

Flowmeters with Valves; Metric-Unit Scales

Float†	For liquid applications			For air applications		
	Flow range (mL/min)	Catalog number	Price	Flow range (LPM)	Catalog number	Price
Flowmeters with 50-mm scale						
BG	5 to 50	TR-32460-30		0.04 to 0.5	TR-32460-40	
SS	10 to 100	TR-32460-32		0.1 to 1	TR-32460-42	
SS	20 to 240	TR-32460-34		0.4 to 5	TR-32460-44	
SS	—	—		1 to 10	TR-32460-46	
AL	—	—		2 to 25	TR-32460-48	
SS	—	—		4 to 50	TR-32460-50	
SS	—	—		10 to 100	TR-32460-52	
Flowmeters with 100-mm scale						
SS	4 to 50	TR-32461-30		0.4 to 5	TR-32461-50	
SS	10 to 120	TR-32461-32		1 to 10	TR-32461-52	
BG	25 to 225	TR-32461-34		2 to 20	TR-32461-54	
SS	40 to 400	TR-32461-36		3 to 30	TR-32461-56	
SS	40 to 660	TR-32461-38		4 to 50	TR-32461-58	
SS	100 to 1500	TR-32461-40		10 to 100	TR-32461-60	
SS	200 to 3000	TR-32461-42		14 to 140	TR-32461-62†	
SS	0.8 to 9 LPM	TR-32461-44†		30 to 280	TR-32461-64†	
SS	1.5 to 20 LPM	TR-32461-46†		—	—	
Flowmeters with 127-mm scale						
SS	4 to 36 LPM	TR-32466-54		100 to 700	TR-32466-66	
SS	—	—		400 to 3400	TR-32466-70	

Flowmeters without Valves; Metric-Unit Scales

Float†	For liquid applications			For air applications		
	Flow range (mL/min)	Catalog number	Price	Flow range (LPM)	Catalog number	Price
Flowmeters with 50-mm scale						
BG	5 to 50	TR-32457-30		0.04 to 0.5	TR-32457-40	
BG	10 to 100	TR-32457-32		0.1 to 1	TR-32457-42	
SS	20 to 240	TR-32457-34		0.4 to 5	TR-32457-44	
SS	—	—		1 to 10	TR-32457-46	
Flowmeters with 100-mm scale						
BG	4 to 50	TR-32458-30		0.4 to 5	TR-32458-50	
SS	10 to 120	TR-32458-32		1 to 10	TR-32458-52	
BG	25 to 225	TR-32458-34		2 to 20	TR-32458-54	
SS	40 to 400	TR-32458-36		3 to 30	TR-32458-56	
SS	40 to 660	TR-32458-38		4 to 50	TR-32458-58	
SS	100 to 1500	TR-32458-40		10 to 100	TR-32458-60	
SS	200 to 3000	TR-32458-42		14 to 140	TR-32458-62†	
SS	0.8 to 9 LPM	TR-32458-44†		30 to 280	TR-32458-64†	
SS	1.5 to 20 LPM	TR-32458-46†		80 to 560	TR-32458-65†	
Flowmeters with 127-mm scale						
SS	1 to 15 LPM	TR-32462-20		100 to 700	TR-32462-30	
SS	4 to 36 LPM	TR-32462-22		100 to 1400	TR-32462-32	
SS	5 to 75 LPM	TR-32462-24		400 to 3000	TR-32462-34	



Cole-Parmer® Flowmeters and Proportional Controllers for Gases

Measure 130 standard gases—user selectable from display

- Accuracy of $\pm 0.8\%$ of reading $+0.2\%$ full-scale; repeatability of $\pm 0.2\%$
- 100 to 1 turndown with ranges of 1 SCCM full-scale up to 1000 SLPM
- Models with 4 to 20 mA output or totalizer are available

These meters measure flow via pressure drop across a laminar flow element (LFE). Because the flow element makes the flow stream laminar, placement in the process does not require straight pipe runs upstream or downstream of the meter, greatly simplifying installation. As compared to thermal mass technologies, the LFE design provides an ultrafast response within 10 milliseconds and offers “instant on” with no warm-up time.

An integrated keypad around the display is all that is required to program the unit for service. The 0 to 5 VDC output allows transmission of the flow value to a remote display, recorder, or controller regulating a valve or pump.

Flow controllers feature an integrated PID to direct the unit's response to process changes. Flow set point is established with keypad, the optional set point control module, a 0 to 5 V signal, or an RS-232 input signal. Order set point control modules separately from the table. For portable flow metering applications, order the battery pack listed below table.

What's included: 120/230 VAC power adapter with communications cable 32929-89 and NIST-traceable calibration report supplied by the manufacturer.



Flow controller
32907-51



Mass flowmeter 32908-59
shown with optional
battery pack 32929-50



Meters and controllers feature a dynamic display that simultaneously shows flow rate, line pressure, fluid temperature, and (for controllers) the set point. For the units shown, both power and input/output signals are transmitted through a single multi-pin connector.



Specifications

Max particulate size:

Up to 1 LPM: 20 μ m
>1 LPM to 1000 LPM: 50 μ m

Accuracy: $\pm 0.8\%$ of reading, $+0.2\%$ full-scale

Repeatability: $\pm 0.2\%$

Response time:

Flowmeters: 10 msec
Flow controllers: 50 msec

Operating temperature:

14 to 122°F (–10 to 50°C)

Max pressure: 145 psig (9.9 bar)

Pressure drop: 0.8 to 3.2 psig (flowmeter)

Output signal: 0 to 5 VDC, RS-232

Input signal: 0 to 5 VDC and RS-232

Wetted materials:

Flowmeters: 302 and 303 SS, Viton®, silicone RTV, and glass-reinforced nylon, aluminum

Flow controllers: 302, 303; Viton, silicone RTV, glass-reinforced nylon, aluminum, brass, 410 SS, silicon, glass

Power:

Flowmeters: 7 to 30 VDC at 30 mA
Flow controllers
Models ≤ 10 LPM: 12 to 30 VDC at 250 mA
Models ≤ 50 LPM: 24 to 30 VDC at 750 mA

Display type: four-digit, seven-line LCD; 1/4" H flow display

Connections:

≤ 10 mL/min: 10-32 UNF
50 mL/min to 10 LPM: 1/8" NPT(F)
50 to 100 LPM: 1/4" NPT(F)
100 and 250 LPM: 1/2" NPT(F)
500 and 1000 LPM: 3/4" NPT(F)

Flow range	Mass flowmeters		Mass flow controllers		Set point modules [†]	
	Catalog number	Price	Catalog number	Price	Catalog number	Price
0.01 to 1 mL/min	TR-32908-51		TR-32907-51		TR-32907-83	
0.05 to 5 mL/min	TR-32908-53		TR-32907-53		TR-32907-85	
0.1 to 10 mL/min	TR-32908-55		TR-32907-55		TR-32907-87	
0.5 to 50 mL/min	TR-32908-57		TR-32907-57		TR-32907-89	
1 to 100 mL/min	TR-32908-59		TR-32907-59		TR-32907-91	
2 to 200 mL/min	TR-32908-61		TR-32907-61		TR-32907-93	
5 to 500 mL/min	TR-32908-63		TR-32907-63		TR-32907-97	
0.01 to 1 LPM	TR-32908-67		TR-32907-67		TR-32907-83	
0.05 to 5 LPM	TR-32908-69		TR-32907-69		TR-32907-85	
0.1 to 10 LPM	TR-32908-71		TR-32907-71		TR-32907-87	
0.5 to 50 LPM	TR-32908-73		TR-32907-73		TR-32907-89	
1 to 100 LPM	TR-32908-75		TR-32907-75		TR-32907-91	
2.5 to 250 LPM	TR-32908-77		TR-32907-77		TR-32907-95	
5 to 500 LPM	TR-32908-79		TR-32907-79		TR-32907-97	
10 to 1000 LPM	TR-32908-81		TR-32907-81		TR-32907-99	

[†]May be ordered as an option.

[TR-17080-10](#) NIST-traceable recalibration

[TR-32929-50](#) Battery pack, for portable operation of mass or volumetric flowmeter only

[TR-32929-89](#) Replacement communication cable, 8-DIN to stripped ends

WIKA® 3A Sanitary Gauges

Get better readings

- Glycerin fill reduces fluctuations
- Manufactured for clean-in-place (CIP) applications
- All-welded gauge assembly contains an external flush diaphragm
- Assembly meets the criteria set forth by 3A standards



ISO9001:2008
CERTIFIED SUPPLIER



Specifications

Accuracy: ±3-2-3% of span	Wetted materials: 316L SS	Process connection: 3/4" Tri-Clamp®
Operating temp: 50 to 257°F (10 to 125°C)	Lens: polycarbonate	Casing: 304 SS
		Dial size: 2 1/2" (64 mm)

Range	Resolution	Catalog number	Price
30 psi	0.5 psi	TR-68056-72	
60 psi	1 psi	TR-68056-74	
100 psi	2 psi	TR-68056-76	
160 psi	2 psi	TR-68056-78	

[TR-17040-10](#) NIST-traceable calibration with data

Ashcroft® Digital Pressure Gauges with Backlight

Simple three-button programming

- Easy-to-read, 5-digit display with backlight and 20-segment bar graph
- Stainless steel sensor; IP67-rated case
- Features tare, min/max memory, and nine engineering plus one custom engineering units



ISO9001:2008
CERTIFIED SUPPLIER



Specifications

Accuracy: ±0.5% full-scale	Wetted materials: 17-4 ph and 316L stainless steel
Dial size: 2 1/2" (64 mm)	Lens: polycarbonate
Operating temp: -4 to 140°F (-20 to 60°C)	Process connection: 1/4" NPT(M)
Units of measure: psi, " Hg, cm Hg, mm Hg, kPa, mPa, bar, kg/cm², ft H₂O, and user-defined unit	Power: two AA batteries (included)

Range	Resolution	Catalog number	Price
0 to 30" Hg	0.01" Hg	TR-68334-01	
30" Hg to 30 psi	0.01" Hg	TR-68334-03	
30" Hg to 100 psi	0.01" Hg	TR-68334-07	
0 to 15 psi	0.001 psi	TR-68334-09	
0 to 30 psi	0.001 psi	TR-68334-11	
0 to 60 psi	0.001 psi	TR-68334-13	
0 to 100 psi	0.01 psi	TR-68334-15	
0 to 200 psi	0.01 psi	TR-68334-17	
0 to 300 psi	0.01 psi	TR-68334-19	
0 to 500 psi	0.01 psi	TR-68334-21	
0 to 1000 psi	0.1 psi	TR-68334-25	
0 to 5000 psi	0.1 psi	TR-68334-27	
0 to 10,000 psi	1 psi	TR-68334-31	

[TR-09376-01](#) Batteries, AA. Pk of 4

[TR-17040-12](#) NIST-traceable calibration with data

Precalibrated Pressure and Flow Meter

Won't fail under pressure

- Reliable measurements, guaranteed! Precalibrated to NIST-traceable standards
- Measures differential and static pressure, and calculates air velocity and airflow in ductwork
- Save and recall 99 sample readings per parameter
- Time clock on Max/Min/Avg provides time reference
- Complete with pitot tube, two rubber hoses, software, and battery



NEW



Description	Pressure and flow meter
Catalog number	TR-20250-13
Range	Pressure: 0 to 0.7252 psi (0 to 50 mbar)
	Air velocity: 200 to 15,733 ft/min (1 to 80 m/s)
	Airflow: 0 to 99,999 cfm/cmm
	Temperature: 32 to 122°F (0 to 50°C)
Accuracy	Pressure: ±0.3% full-scale
	Temperature: ±2.0°F (1.0°C)
Display	Backlit LCD
Power	One 9 V battery
Price	

Handheld Differential Pressure Meters

Intrinsically safe models for hazardous use

- Select one of nine units
- Feature zero, hold, maximum, minimum, and out-of-range, functions
- Smooth fluctuating pressure readings with filter function
- Displays average of last sixteen pressure readings



Specifications

Accuracy: ±0.2% full scale	Process connections: 1/8" BSP
Operating temperature: 32 to 122°F (0 to 50°C)	Units of measure: psi, " H₂O, cm H₂O, " Hg, mm Hg, mbar, torr, kPa, and kg/cm²
Temperature range (compensated): 68 to 86°F (20 to 30°C)	Power: one 9 V battery (included)
Media compatibility: clean, noncorrosive, inert gases	Approval (intrinsically safe models): EEx Ia IIC T4

Range	Resolution	Catalog number	Price
Intrinsically safe differential pressure gauges			
-5 to 5 psid	0.001 psi	TR-68600-06	
-30 to 30 psid	0.01 psi	TR-68600-02	
-100 to 100 psid	0.1 psi	TR-68600-04	
Non-intrinsically safe differential pressure gauges			
-5 to 5 psid	0.001 psi	TR-68600-10	
-30 to 30 psid	0.01 psi	TR-68600-12	
-100 to 100 psid	0.1 psi	TR-68600-14	

[TR-95616-00](#) PVC tubing, 4 mm ID x 6 mm OD. Pack of 25 ft.

[TR-09376-04](#) Replacement batteries, 9 V. Pack of 4

[TR-17090-31](#) NIST-traceable calibration with data

Cole-Parmer® Gas Regulators

Deliver gas at constant pressure and volume, from full cylinder inlet pressure to end point working pressure

General-Purpose Regulators

These regulators are designed for economy and longevity in applications involving inert and noncorrosive gases. Include 10 µm sintered SS filter, rubber valve seat, nylon-reinforced rubber diaphragm, aluminum-alloy body and bonnet, and brass gauges.

A. Single-Stage Regulators

are designed for long-life performance where precise pressure control is not desired. Overload protected.

B. Two-Stage Regulators

reduce cylinder pressure in two stages. Use first stage to approach working pressure; use second stage for precise adjustment of working pressure. Second stage is overload protected.

High-Purity Regulators

Ideal for corrosive or noncorrosive gas applications. Designed and constructed for diffusion resistance and easy cleanup. Only brass, stainless steel (SS), PTFE, and Kel-F® contact the operating media. Metal diaphragm, packless valves, and high-purity seals minimize or eliminate outgoing and inboard diffusion. Supplied with SS screen filter (25 µm); and brass body, bonnet, and gauges.

C. Single-Stage High-Purity Regulators

are recommended for analytical work where precise pressure control is not critical.

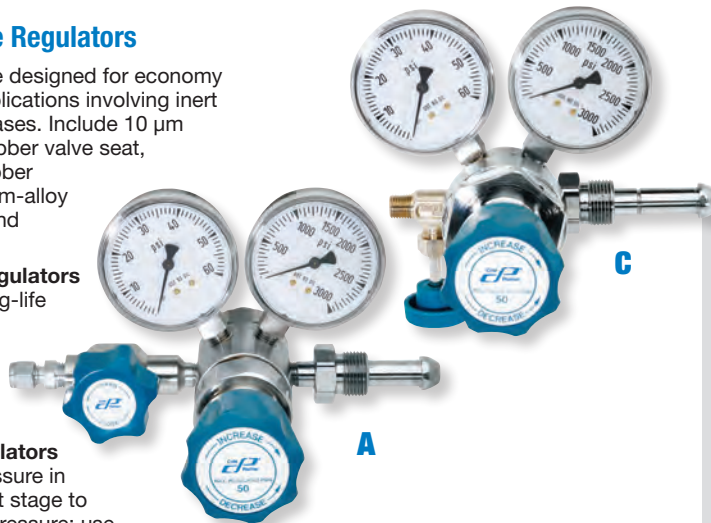
D. Two-Stage High-Purity Regulators let you precisely regulate working pressure.

Special-Service Regulators

E. Model 03274-10 is a single-stage unit specially designed for gases that attack brass or copper-bearing alloys. When used with low-vapor-pressure liquefied gases, no inlet gauge is needed. Rubber-supported PTFE diaphragm, Kel-F® seat, aluminum-alloy body and bonnet, SS delivery gauge, and 10 µm sintered SS filter.

F. Model 03274-15 is for regulating corrosive halogen gases. Monel® filter, body, gauges, and diaphragm; chrome-plated brass bonnet; and Kel-F® valve seat.

G. Model 03274-20 is a two-stage 316 SS regulator with packless diaphragm valve—handles electronic and corrosive gases. Only SS and PTFE contact operating media. Excellent diffusion resistance; effective for trace analysis. Metal-to-metal diaphragm seal minimizes leak rate to reduce vacuum purging time and residual contaminant levels. Bubble-tight shutoff.



Gas/Regulator Selection Table

Gas	Quality grade	Key letter	CGA fitting
Air	Compressor	A-B	346
	Ultrapure, Zero grade	C-D	590
Ar	Ultra high-purity	A-B	580
	Research, Ultrapure	C-D	580
	Zero grade	C-D	580
BF ₃	All	F	330
C ₂ H ₄	All	A-B	350
C ₂ H ₆	All	A-B	350
CF ₄	All	A	580
CH ₄	Chemically pure, Technical	A-B	350
	Commercial	A-B	350
	Instrument	C-D	350
CO	All	A-B	350
CO ₂	Coleman, Chemically pure	A-B	320
	Research, Anaerobe grade	C-D	320
D ₂	Chemically pure	A-B	350
	Research	C-D	350
H ₂	Ultra high-purity	A-B	350
	Research, Ultrapure	C-D	350
	Zero grade	C-D	350
HCl	Electronic, Technical	F	330
He	High-purity	A-B	580
	Research, Ultrapure	C-D	580
	Zero grade	C-D	580
Kr	Research	C-D	580
N ₂	Ultra high-purity	A-B	580
	Research, Ultrapure	C-D	580
	Zero grade	C-D	580
Ne	Chemically pure	A-B	580
	Research	C-D	580
NF ₃	All	F	330
NH ₃	Electronic	E	660
O ₂	Research, Ultrapure	C-D	540
	Zero grade	C-D	540
	Extra-dry	C	540
SF ₆	All	A-B	590
SiH ₄	Semiconductor	G	350
Xe	All	C-D	580

Specifications

Maximum delivery pressure:

Low psig series—
Model G (03274-20): 25 psi
All other low psig models: 50 psi
High psig series—
Model F (03274-15): 200 psi
All other high psi models: 100 psi

Maximum inlet pressure:

Model E (03274-10): 400 psi
All other models: 3000 psi

Delivery gauge graduations:

Low psig series
Model G (03274-20): 1 psi
All other models: 2 psi
High psig series: 5 psi

Inlet gauge graduations:

Models F and G: 50 psi
All other models: 100 psi

Outlet connection:

Models A, B, E, and F: 1/4" NPT(M)
Models C, D, and G: 1/4" NPT(F);
compression fitting for 6-mm
OD tubing included

Key	Type	CGA fitting	Low psig regulators			High psig regulators		
			Catalog number	Capacity	Price	Catalog number	Capacity	Price
A	Single-stage	320	TR-98202-00	850 scfh		TR-98202-10	1500 scfh	
		346	TR-98202-01	850 scfh		TR-98202-11	1500 scfh	
		350	TR-98202-02	850 scfh		TR-98202-12	1500 scfh	
		580	TR-98202-03	850 scfh		TR-98202-13	1500 scfh	
		590	TR-98202-04	850 scfh		TR-98202-14	1500 scfh	
B	Two-stage	320	TR-98202-20	600 scfh		TR-98202-30	1200 scfh	
		346	TR-98202-21	600 scfh		TR-98202-31	1200 scfh	
		540	TR-98202-22	600 scfh		TR-98202-32	1200 scfh	
		580	TR-98202-23	600 scfh		TR-98202-33	1200 scfh	
		590	TR-98202-24	600 scfh		TR-98202-34	1200 scfh	
C	High-purity single-stage	320	TR-98210-20	500 scfh		TR-98210-30	1000 scfh	
		350	TR-98210-22	500 scfh		TR-98210-32	1000 scfh	
		540	TR-98210-24	500 scfh		TR-98210-34	1000 scfh	
		580	TR-98210-26	500 scfh		TR-98210-36	1000 scfh	
		590	TR-98210-28	500 scfh		TR-98210-38	1000 scfh	
D	High-purity two-stage	320	TR-98210-00	450 scfh		TR-98210-10	900 scfh	
		350	TR-98210-02	450 scfh		TR-98210-12	900 scfh	
		540	TR-98210-04	450 scfh		TR-98210-14	900 scfh	
		580	TR-98210-06	450 scfh		TR-98210-16	900 scfh	
		590	TR-98210-08	450 scfh		TR-98210-18	900 scfh	
E	Specialty	660	TR-03274-10	2200 scfh	—	—	—	
F		330	—	—	TR-03274-15	780 scfh	—	
G		350	TR-03274-20	240 scfh	—	—	—	

Cole-Parmer® Two- and Three-Way Direct Lift Solenoid Valves

Ideal with high-purity or corrosive fluids—made of inert PTFE

- Minimize trapped liquids with minimal dead volume
- Mount almost anywhere—lightweight and compact

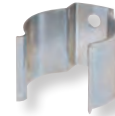
Models with a 1/16" orifice have mounting holes at the bottom only and models with a 3/32" or 5/32" orifice have mounting holes at the top and bottom. Optional mounting clip 01540-50 can be used to mount valves with a 1/16" orifice in any position.



★★★★★
“High quality valve”



Mounting flange
01540-55



Mounting clip
01540-50



Specifications

Vacuum rating: 26" Hg Lead wire length: 15" (38 cm)
Maximum fluid temperature: 158°F (70°C)



Ports NPT(F)	Orifice	Max psi	Response time	Watts	12 VDC		24 VDC	
					Catalog number	Price	Catalog number	Price
Two-way solenoid valves; normally closed								
1/4-28	1/16"	30	20 ms	4.0	TR-01540-01		TR-01540-02	
1/4-28	1/16"	60	25 ms	8.0	TR-01540-03		TR-01540-04	
1/4-28	3/32"	20	20 ms	5.1	TR-01540-05		TR-01540-06	
1/8	5/32"	18	30 ms	8.0	TR-01540-07		TR-01540-08	
Two-way solenoid valves; normally open								
1/4-28	1/16"	30	20 ms	4.0	TR-01540-09		TR-01540-10	
Three-way solenoid valves								
1/4-28	1/16"	30	20 ms	4.0	TR-01540-11		TR-01540-12	
1/4-28	1/16"	60	25 ms	8.0	TR-01540-13		TR-01540-14	
1/8	5/32"	18	30 ms	8.0	TR-01540-17		TR-01540-18	

TR-01540-50 Mounting clip for two- and three-way valves

TR-01540-55 Mounting flange for two- and three-way valves

Can't choose?

Trust our **expert** Application Specialists to help you find the right product.

Jeevan, 25+ years of experience

Call: 800-323-4340 E-mail: sales@coleparmer.com

Miniature Check Valves

Install in any position—
use with liquids and gases



Breaking pressure is 0.18 psi, closing pressure is 0.014 psi. Maximum temperature (at maximum psi) is 250°F (121°C) for “A” and “C”; 200°F (93°C) for “B.”

Note: Valves require 1 psi back pressure for a tight seal.

Tubing ID	C _v	Working pressure	Catalog number	Price
A. Nylon body and fluorosilicone diaphragm				
1/8"	0.12	3 to 5 psi (0.2 to 0.3 bar)	TR-98553-00	
3/16"	0.13		TR-98553-01	
1/4"	0.13		TR-98553-02	
B. PP body and Viton® diaphragm				
1/8"	0.11	3 to 5 psi (0.2 to 0.3 bar)	TR-98553-10	
3/16"	0.12		TR-98553-11	
1/4"	0.12		TR-98553-12	
5/16"	0.13		TR-98553-13	
C. PVDF body and Viton diaphragm				
3/16"	0.12	3 to 5 psi (0.2 to 0.3 bar)	TR-98553-21	
1/4"	0.12		TR-98553-22	
3/8"	0.12		TR-98553-34	

Cole-Parmer® Solenoid-Operated 2- and 3-Way Pinch Valves

No contamination of valve

- Control flow in your tubing without direct contact between the fluid and the valve
- Fast response time
- Low-power consumption and high-cycle life
- Excellent for sanitary and pharmaceutical applications



What's included: 15" 26-gauge PTFE-coated lead wires. Two-way valves include a 12" length of silicone tubing; three-way valves include two 6" (15.2 cm) lengths of tubing with a “Y” connector.



Tubing size (ID x OD)	Max pressure	Watts	12 VDC		24 VDC	
			Cat. no.	Price	Cat. no.	Price
Two-way pinch valves; normally closed						
1/32" x 3/32"	15 psi (1 bar)	2.6	TR-98302-00		TR-98302-10	
1/16" x 1/8"	15 psi (1 bar)	2.6	TR-98302-02		TR-98302-12	
1/8" x 1/4"	20 psi (1.4 bar)	4.0	TR-98302-06		TR-98302-16	
Two-way pinch valves; normally open						
1/32" x 3/32"	15 psi (1 bar)	2.6	TR-98302-20		TR-98302-30	
1/16" x 1/8"	15 psi (1 bar)	2.6	TR-98302-22		TR-98302-32	
1/8" x 1/4"	20 psi (1.4 bar)	4.0	TR-98302-26		TR-98302-36	
Three-way pinch valves; one normally open, one normally closed						
1/32" x 3/32"	15 psi (1 bar)	2.6	TR-98302-40		TR-98302-48	
1/16" x 1/8"	15 psi (1 bar)	2.6	TR-98302-42		TR-98302-50	
1/8" x 1/4"	20 psi (1.4 bar)	4.0	TR-98302-46		TR-98302-54	

TR-01540-50 Mounting clip for 2- and 3-way valves

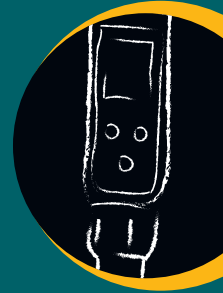
TR-01540-55 Mounting flange for 2- and 3-way valves

Oakton® Meters for Any Application



Testers—
simply dip and read

Conductivity 40
pH 42–43



Handheld Meters—
take it where you need it

Conductivity 41
pH 43–44
Dissolved Oxygen Online
Multiparameter Online



Benchtop Meters—
higher precision for
more accurate results

Conductivity Online
pH/Ion 45
Dissolved Oxygen Online
Multiparameter Online



MORE ONLINE ▶ ColeParmer.com/Oakton

Product Selection | Troubleshooting | And More...

800-323-4340
— or Ch@t Live —

Not sure what to choose?
Our expert Application Specialists can help you find the right product for your application.



Oakton® Dual-Range Waterproof TDSTestr® 11 and ECTestr® 11 Meters

Get longer life with replaceable sensor

- Don't worry about losing your meter—floats if dropped in water and included lanyard keeps it close
- Get more out of your meter—dual range measurements for a wider application range
- Easy calibration—up to one point per range
- Stands up to whatever you throw at it—Valox® housing and stainless steel electrodes for good chemical compatibility



Replaceable sensor



Description		TDSTestr 11 Dual Range	ECTestr 11 Dual Range
Catalog number		TR-35662-10	TR-35662-30
Range	Conductivity	0 to 2000 ppm; 0 to 10.0 ppt	0 to 2000 µS; 0 to 20.00 mS
	Temperature	32 to 122°F (0 to 50°C)	32 to 122°F (0 to 50°C)
Resolution	Conductivity	10 ppm; 0.10 ppt	10 µS; 0.10 mS
	Temperature	0.1°F (0.1°C)	0.1°F (0.1°C)
Accuracy	Conductivity	±1% full scale	±1% full scale
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)
Temperature compensation		Automatic, 0 to 50°C; 2% per °C	Automatic, 0 to 50°C; 2% per °C
Calibration		One or two points	One or two points
Power		Four 1.5 V alkaline batteries (included), approximately 150 hours continuous use	
Price			

Accessories

- TR-35661-17** Replacement sensor for pin-style testers
- TR-09377-16** Replacement batteries, 1.5 V button cell. Pack of 6
- TR-35661-70** Calibration kit, includes two each of TDS calibration solution pouches (447, 1413, 2764, and 15,000 µS), two rinse water pouches, sample jar, and foam-lined carrying case. Use with any Oakton TDS/ECTestr meter
- TR-17090-30** NIST-traceable calibration for conductivity meter

Wait!

There's More at ColeParmer.com

- ✓ Search **100,000+** products
 - ✓ Find full **product details**
- And much more!

Cole-Parmer® Conductivity Solutions, NIST-Traceable Reference Materials

Trust your standards—high accuracy



- Up to ±0.25% accuracy verified by an ISO Guide 34 and ISO 17025 accredited lab

A. Batch-Tested Bottles, 16-oz

- Easy calibration with included instructions and temperature compensation chart
- Includes NIST-traceable certificate and batch testing information



B. Individually Tested Bottles, 16-oz

- Each bottle individually calibrated—NIST-traceable certificate included with serial number and testing information
- Easy calibration with step-by-step instructions and included temperature compensation chart

C. One-Shot® Vials, pack of six 3.4-oz vials

- Fresh solution each time you calibrate—single-use vials eliminate contamination
- Grab it and go—convenient for field use; calibrate right in vial
- Includes NIST-traceable calibration report and temperature compensation chart



Conductivity (µS)	Resistivity (MΩ)	TDS (ppm)	Catalog number	Price
A. Batch tested, one 16-oz (473-mL) glass bottle				
1	1	0.66	TR-00652-20	
5	0.2	3.3	TR-00652-22	
10	0.1	6.6	TR-00652-24	
100	0.01	66	TR-00652-26	
1000	0.001	666	TR-00652-28	
1413	0.00071	933	TR-00652-30	
10,000	0.0001	6666	TR-00652-32	
100,000	0.00001	66,666	TR-00652-34	
150,000	0.0000066	100,000	TR-00652-53	
200,000	0.000005	133,333	TR-00652-55	
B. Individually tested, one 16-oz (473-mL) glass bottle				
1	1	0.66	TR-00652-40	
5	0.2	3.3	TR-00652-42	
10	0.1	6.6	TR-00652-44	
100	0.01	66	TR-00652-46	
1000	0.001	666	TR-00652-48	
1413	0.00071	933	TR-00652-50	
10,000	0.0001	6666	TR-00652-52	
100,000	0.00001	66,666	TR-00652-54	
150,000	0.0000066	100,000	TR-00652-56	
200,000	0.000005	133,333	TR-00652-58	
C. One-Shot®, pack of six 3.4-oz (100-mL) vials				
5	0.2	3.3	TR-00652-60	
10	0.1	6.6	TR-00652-62	
100	0.01	66	TR-00652-64	
1000	0.001	666	TR-00652-66	
1413	0.00071	933	TR-00652-68	
10,000	0.0001	6666	TR-00652-70	
100,000	0.00001	66,666	TR-00652-72	
150,000	0.0000066	100,000	TR-00652-76	
200,000	0.000005	133,333	TR-00652-78	
Assortment†	—	—	TR-00652-74	

†Assortment has one 100-mL vial each of 10, 100, 1000, 1413, 10,000, and 100,000 µS.

Oakton® Waterproof CON 450 Meter

NEW

Easy to read in any environment

- Use it in any environment with backlit display and rugged design
- Know the status of your probe—intuitive, user-friendly icon displays cell constant
- Get quick and easy electrode attachment to a beaker or container with Grip-Clip™ holder
- Download and analyze up to 500 data sets with USB or RS-232 output
- Use as a benchtop meter as well—built-in stand and wall-mount option
- Versatile power supply—battery or AC

Waterproof, IP67-rated meter is ideal for even the harshest environments. View the main measurement simultaneously with temperature on backlit display. Get faster calibration with auto-cal function, which permits one calibration point per measurement range. Select a probe with a 0.1, 1.0, or 10 cell constant and automatic temperature compensation (ATC). Get more accuracy even in fluctuating temperatures with ATC.

Meter features include adjustable conductivity-to-TDS factor, selectable temperature coefficient, ready (stability) indicator, smart averaging, user-selectable °F/°C units, hold function, calibration alarm, battery life-indicator, and electrode status.

Meter includes: conductivity cell (model 35608-50, K = 1.0), Grip-Clip holder, and batteries.

Kit adds: calibration standards and hard carrying case.



Easy one-button data logging



Description	CON 450 meter with probe	CON 450 meter kit
Catalog number	TR-35608-32	TR-35608-80
Precalibrated catalog number	TR-35608-34	TR-35608-81
Range	Conductivity	0 to 200 mS
	TDS	0 to 200 ppt
	Salinity	0 to 50 ppt
	Temperature	-17.0 to 230.0°F (-10.0 to 110.0°C)
Resolution	Conductivity	0.01 µS to 0.1 mS
	TDS	0.01 ppm to 0.1 ppt
	Salinity	0.01
	Temperature	0.1°F/°C
Accuracy	Conductivity	±1% full-scale
	TDS	±1% full-scale
	Salinity	±1% full-scale
	Temperature	±0.9°F (±0.5°C)
Calibration	Conductivity	Auto/manual; 1 point/range
	TDS	Auto/manual; 1 point/range
	Salinity	Auto/manual; 1 point/range
	Temperature	±5.0° offset
Temperature compensation	Automatic or manual from -10 to 110°C	
Data logging	Stores up to 500 data sets	
Output	USB or RS-232	
Power	Two AA batteries (included); 500 hours (without backlight); AC adapter (optional)	
Price		
Precalibrated price		

Save time, save money!

Choose Precalibrated
Includes a data-rich, ISO 17025 certificate—no additional charge!

Precalibrated by **INNOCAL**
INNOVATIVE CALIBRATION SOLUTIONS



Convenient kit saves you money!

Accessories

[TR-35608-55](#) Conductivity cell, K = 0.1

[TR-35608-50](#) Replacement conductivity cell, K = 1.0

[TR-35608-51](#) Conductivity cell, K = 10

[TR-35614-50](#) Replacement Grip-Clip electrode holder

[TR-35614-51](#) Hard carrying case

[TR-35630-53](#) Data cable for USB connectivity

[TR-35420-01](#) Data cable for RS-232 connectivity

[TR-35420-72](#) Optional AC adapter, 110/220 VAC

[TR-09376-01](#) Replacement batteries, AA. Pack of 4



★★★★★
“Great tool!”

Oakton® Waterproof EcoTestr™ pH 2 Pocket Meter

No more replacing electrodes

- Easy to use—simply dip and read results on the easy-to-read display
- Waterproof housing is ideal for dirty or damp conditions—even floats if dropped in water
- Transparent protective cap also holds calibration solutions

Single-junction electrode is recessed to protect against breakage. Meter offers up to three-point calibration with auto-buffer recognition for quick calibrations. Automatic temperature compensation ensures accurate readings, even under changing conditions. Hold function allows you to lock a measured value.



Model	EcoTestr pH 2
Catalog number	TR-35423-10
Range	0 to 14.0 pH
Resolution	0.1 pH
Accuracy	±0.1 pH
Temperature compensation	Automatic
Calibration	Up to 3 points
Buffer recognition	4.0, 7.0, or 10.0
Power	Four 1.5 V button cell batteries (included)
Price	

[TR-09377-16](#) Replacement batteries, 1.5 V. Pack of 6

[TR-17101-45](#) NIST-traceable calibration for pH pocket meters (non-BNC)

Teky's Tips



Get the best performance

- To avoid cross-contamination, rinse sensor between samples and calibration standards with clean water.
- To maintain tester accuracy, calibrate at regular intervals as required.
- For long-term storage, fill cap with 20 mm of storage solution (NOT de-ionized water) and replace cap. This will keep sensor conditioned and ready for next use.

Oakton® Waterproof Multiparameter Testr™ 35-Series Pocket Meters

Save time and money—like three meters in one!

- Parameters include pH, conductivity, TDS, salinity, and temperature
- Compatible with a wide range of samples with long-life pH electrode and stainless steel pin-style conductivity sensor
- Save money by replacing sensor module

Advanced features include up to 5 point pH calibration with NIST or USA autobuffer recognition, auto-shutoff, user-adjustable temperature coefficient, self-adjusting TDS and salinity factor, and low-battery indicator. The IP67-rated housing floats if accidentally dropped into water.



Model	PCTestr 35	PTTestr 35	PCSTestr 35	
Catalog number	TR-35425-00	TR-35425-05	TR-35425-10	
Range	pH	0 to 14.0	0 to 14.0	0.00 to 14.00
	Conductivity	0 to 2000 µS/cm; 2.00 to 20.00 mS/cm	—	0.0 to 200.0, 200 to 2000 µS/cm; 2.00 to 20.00 mS/cm
	TDS	—	0 to 1000 ppm; 1.00 to 10.00 ppt	0.0 to 100.0 ppm, 100 to 1000 ppm; 1.00 to 10.00 ppt
	Salinity	—	—	0.0 to 100.0 ppm, 100 to 1000 ppm; 1.00 to 10.00 ppt
	Temperature	32 to 112°F (0 to 50.0°C)	32 to 112°F (0 to 50.0°C)	32 to 112°F (0 to 50.0°C)
	Resolution	pH	0.1	0.1
Conductivity		0.1 µS/cm; 0.01 mS/cm	—	0.1 µS, 1 µS/cm; 0.01 mS/cm
TDS		—	1 ppm; 0.01 ppt	0.1 ppm, 1 ppm; 0.01 ppt
Salinity		—	—	0.1 ppm, 1 ppm; 0.01 ppt; 0.01%
Temperature		0.1°F (0.1°C)	0.1°F (0.1°C)	0.1°F (0.1°C)
Accuracy	pH	±0.1	±0.1	±0.01
	Conductivity	1% full scale	—	1% full-scale
	TDS	—	1% full-scale	1% full-scale
	Salinity	—	—	1% full-scale
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)
Temperature compensation	Automatic or manual, 32 to 122°F (0 to 50°C)			
Calibration	pH	3 to 5 pH points		
	Conductivity	1 to 3 point standard/manual calibration		
Buffer recognition	USA: 1.68, 4.01, 7.00, 10.01, 12.45; NIST: 1.68, 4.01, 6.86, 9.18, 12.45			
Power	Four 1.5 V button cell batteries (included)			
Price				

[TR-35425-50](#) Replacement pH/conductivity/TDS/salinity sensor module

[TR-09377-16](#) Replacement batteries, 1.5 V button cell. Pack of 6

[TR-17101-45](#) NIST-traceable calibration for pH pocket meters (non-BNC)

[TR-17090-30](#) NIST-traceable calibration for conductivity meters



★★★★★
“Great pH meter!”

Oakton® Waterproof pHTestr® 10, 20, and 30 Pocket Meters

Save money—replace electrode instead of meter

- IP67-rated housing floats in water and won't roll off table
- Resistant to most chemicals with Valox® sensor housing
- Automatic buffer recognition for calibration up to three points
- Don't let temperature interfere—automatic temperature compensation minimizes impact

Double-junction electrode sensors handle wastewater and solutions containing sulfides, heavy metals, and Tris. Electrode sensors offer a clog-resistant Kynar® PVDF junction and a recessed, glass pH bulb to protect against breakage.

pHTestr 10 offers the most economical option.

pHTestr 20 features ±0.01 pH accuracy—suitable for most ASTM and EPA test procedures.

pHTestr 30 includes all of the features of the pHTestr 20 along with dual pH and 0.1-resolution temperature display. Temperature display units in selectable °F or °C.

What's included: protective plastic storage case, lanyard, and batteries.



Description	pHTestr 10	pHTestr 20	pHTestr 30 with temperature readout
Catalog number	TR-35634-10	TR-35634-20	TR-35634-30
Range	-1.0 to 15.0 pH	-1.00 to 15.00 pH	-1.00 to 15.00 pH
Resolution	0.1 pH	0.01 pH	0.01 pH
Accuracy	±0.1 pH	±0.01 pH	±0.01 pH
Temperature compensation	Automatic, 32 to 122°F (0 to 50°C)		
Calibration	Up to three pH points		
Buffer recognition	4.0, 7.0, 10.0 USA 4.0, 6.9, 9.2 NIST	4.01, 7.00, 10.01 USA 4.01, 6.86, 9.18 NIST	
Power	Four 1.5 V button cell batteries (included)		
Price			

TR-35624-38 Replacement pH sensor

TR-09377-16 Replacement batteries, 1.5 V button cell. Pack of 6

TR-17101-45 NIST-traceable calibration for pH pocket meters (non-BNC)

Oakton® pH 5+ and pH 6+ Meters

Get high accuracy at low prices

- Autobuffer recognition for up to five-point calibration provides ±0.01 pH accuracy
- Take this compact unit anywhere
- Get pH and temperature readings at the push of a button
- Improve your accuracy with automatic temperature compensation (ATC) from 0 to 100°C
- Protect your unit with protective rubber boot that doubles as a stand
- Choose the pH 6+ meter to also read mV



Meter includes: ATC probe, protective rubber boot, and batteries.

Meter with probe adds: pH electrode 59001-65

Meter kit adds: “All-in-one” pH electrode, pH buffer solutions, sample bottles, rinse bottle, and carrying case.

Save time, save money!

Choose Precalibrated
Includes a data-rich, ISO 17025 certificate—**no additional charge!**

Precalibrated by **INNOCAL**
INNOVATIVE CALIBRATION SOLUTIONS



Specifications

Mode	pH	mV (pH 6+ only)	Temperature
Range	0.00 to 14.00 pH	±1000 mV or rel mV	0 to 100.0°C
Resolution	0.01 pH	1 mV	0.1°C
Accuracy	±0.01 pH	±2 mV	±0.5°C
Calibration	Up to five points: pH 1.68, 4.01, 7.00, 10.00, 12.45 (USA); pH 1.68, 4.01, 6.86, 9.18, 12.45 (NIST) pH 4.10, 6.97 (Pb)	±20 mV	Offset 0.1°C increments

Temp compensation: automatic with ATC probe, 0 to 100°C

Power: four AAA batteries (included)

Model	Description	Meter		Precalibrated	
		Cat. no.	Price	Cat. no.	Price
pH 5+	Meter only	TR-35613-50		TR-35613-51	
pH 6+	Meter only	TR-35613-20		TR-35613-41	
pH 5+	Meter with probe	TR-35613-52		TR-35613-53	
pH 6+		TR-35613-22		TR-35613-42	
pH 5+	Meter kit	TR-35613-54		TR-35613-55	
pH 6+		TR-35613-24		TR-35613-44	

Accessories

TR-59001-65 Replacement pH electrode; single-junction, gel-filled. Epoxy body, BNC connector

TR-35811-71 “All-in-one” combination pH probe with built-in ATC; single-junction sealed, epoxy body, BNC connector

TR-35811-72 “All-in-one” combination pH probe with built-in ATC; double-junction sealed, epoxy body, BNC connector

TR-35613-05 Replacement ATC probe, stainless steel

TR-09376-00 Replacement batteries, AAA. Pack of 12

Electrochemistry

pH/Ion Meters

Oakton® Waterproof pH 450 Meter

No more difficulty reading measurements

- Use it in any environment with backlit display and rugged design
- Intuitive, user-friendly icons show electrode status as pH slope
- Get quick and easy electrode attachment to a beaker or container with Grip-Clip™ holder
- Download and analyze up to 500 data sets with USB or RS-232 output
- Use as a benchtop meter as well—built-in stand and wall-mount option

NEW

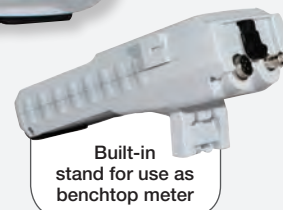
Waterproof, IP67-rated meter is ideal for even the harshest environments. View the main measurement simultaneously with temperature and calibration data with % slope on the large, backlit LCD. Be more accurate with up to six calibration points from USA, NIST, DIN, and custom pH buffers. Automatic temperature compensation (ATC) ensures measurement accuracy even in fluctuating temperatures.

Additional features include ready (stability) indicator, smart averaging, hold function, calibration alarm (visible), battery-life indicator, and electrode status.

Meter only includes: Grip-Clip holder and two AA batteries.

Meter with probe adds: "All-in-one" pH/temperature electrode (model 35808-71).

Meter kit further adds: pH buffer solutions, storage solution, rinse solution, and hard carrying case.



OAKTON®

ISO 9001:2008
CERTIFIED SUPPLIER



Description		Meter only	Meter with probe	Meter kit
Model		pH 450		
Catalog number		TR-35618-32	TR-35618-30	TR-35618-90
Precalibrated cat. no.		TR-35618-34	TR-35618-33	TR-35618-91
Range	pH		-2.00 to 16.00	
	mV		±2000 mV	
	Ion		0.0 to 19,999	
	Temperature		-17.0 to 230.0°F (-10.0 to 110.0°C)	
Resolution	pH		0.01	
	mV		0.1 mV ±999.9 mV; 1 mV beyond	
	Ion		0.01	
	Temperature		0.1°F/°C	
Accuracy	pH		±0.01	
	mV		±0.2 mV ±2 LSD or ±0.5% of reading; whichever is greater	
	Ion		±0.5% full-scale (monovalent); ±1% full-scale (divalent)	
	Temperature		±0.9°F (±0.5°C)	
Calibration	pH		Up to 6 points: USA, NIST, DIN	
	mV		±200 mV	
	Ion		Up to 6 points	
	Temperature		Offset 0.1 increments	
Temperature compensation		Automatic or manual from -10 to 110°C		
Output		USB or RS-232		
Data logging		500 data sets		
Power		Two AA batteries (included); universal power adapter (optional)		
Price				
Precalibrated price				

Accessories

- [TR-35808-71](#) Replacement "All-in-One" pH electrode with built-in ATC; single-junction, epoxy body, BNC connector
- [TR-35808-72](#) "All-in-One" pH electrode with built-in ATC; double-junction, epoxy body, BNC connector
- [TR-35618-05](#) ATC probe. Use with any standard pH electrode for temperature compensation
- [TR-35614-50](#) Replacement Grip-Clip electrode holder
- [TR-35614-51](#) Hard carrying case, for 150/450 meters
- [TR-35630-53](#) Data cable for USB connectivity
- [TR-35420-01](#) Data cable for RS-232 connectivity
- [TR-35420-72](#) Optional adapter, 110/220 VAC
- [TR-09376-01](#) Replacement batteries, AA. Pack of 4
- [TR-17106-20](#) NIST-traceable calibration with data for pH meter



Kim, 12 years of experience

Need Help Selecting?

Trust our **expert** Application Specialists to help you find the right product.

800-323-4340 sales@coleparmer.com ColeParmer.com



Oakton® Benchtop pH 700 and Ion 700 Meters

No more lost data—store and recall up to 100 data sets

- Takes up less bench space—40% smaller than comparable models
- Super-large dual-line display is easy to read
- Simple calibrations with 5-point automatic pH buffer recognition for USA and NIST buffers
- More accurate measurements with up to 5-point calibration for ion concentration on Ion 700 model
- Versatile—use with any pH, ORP, or ISE electrodes with BNC connector

pH 700 meter measures pH, mV, relative mV, and temperature. Ion 700 meter adds ion concentration measurement and reads directly in ppm for easy use. Automatic temperature compensation (ATC) maintains reading accuracy even with fluctuating temperatures.

Meters feature Auto-Hold, selectable °F or °C measurement, and easy recall of electrode slope or offset.



Save time, save money!

Choose Precalibrated

Includes a data-rich, ISO 17025 certificate—**no additional charge!**

Precalibrated by **INNOCAL**
INNOVATIVE CALIBRATION SOLUTIONS

Keep procedures handy with quick-reference pull out

Search

For our complete selection of pH/ion meters, go to...
ColeParmer.com/pHMeters



Specifications

Model		pH 700	Ion 700
Range	pH	-2.00 to 16.00	-2.00 to 16.00
	mV/rel mV	±2000	±2000
	ISE	—	0.01 to 2000 ppm
	Temperature	32 to 100°F (0.0 to 100.0°C)	32 to 100°F (0.0 to 100.0°C)
Resolution	pH	0.01 pH	0.01 pH
	mV/rel mV	0.1 within ±199.9 mV, 1 beyond ±199.9 mV	0.1 within ±199.9 mV, ±2 beyond ±199.9 mV
	ISE	—	0.01 to 2000 ppm
	Temperature	0.1°F or °C	0.1°F or °C
Accuracy	pH	±0.01 pH	±0.01 pH
	mV/rel mV	±0.2 within ±199.9 mV, ±2 beyond 199.9 mV	±0.2 within ±199.9 mV, ±2 beyond 199.9 mV
	ISE	—	±0.5% of reading (monovalent); ±1% of reading (divalent)
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)
Calibration	pH	Up to 5 points with autobuffer recognition	Up to 5 points with autobuffer recognition
	mV	Up to ±150 mV offset adjustment	Up to ±150 mV offset adjustment
	ISE	—	From 2 to 5 consecutive points (0.1, 1.0, 10.0, 100.0, 1000 ppm)
Temperature compensation		Automatic or manual from 32 to 100°F (0 to 100°C)	Automatic or manual from 32 to 100°F (0 to 100°C)
Buffer recognition		USA or NIST buffer sets	USA or NIST buffer sets
Data logging		100 data sets	100 data sets
Power		100/240 VAC, 50/60 Hz	100/240 VAC, 50/60 Hz

Model	Description	Meter		Precalibrated meter	
		Catalog number	Price	Catalog number	Price
pH 700	Meter only	TR-35419-00		TR-35419-01	
pH 700	Meter with "all-in-one" pH/ATC electrode	TR-35419-03		TR-35419-05	
Ion 700		TR-35419-23		TR-35419-27	
pH 700	Meter with double-junction pH electrode, ATC probe, and removable electrode holder	TR-35419-10		TR-35419-11	
Ion 700		TR-35419-20		TR-35419-24	
pH 700	Meter with removable electrode holder	TR-35419-12		TR-35419-15	
Ion 700		TR-35419-22		TR-35419-26	

[TR-59001-65](#) Combination pH electrode; single junction, gel-filled, epoxy body

[TR-59001-70](#) Combination pH electrode; double junction, gel-filled, epoxy body

[TR-35811-71](#) "All-in-one" combination pH electrode; single junction, gel-filled, epoxy body

[TR-35805-04](#) Replacement combination pH electrode; double junction, refillable, glass body

[TR-35613-13](#) Replacement ATC probe, SS

[TR-35420-54](#) Replacement electrode arm

[TR-17106-20](#) NIST-traceable calibration with data for pH/ion meter

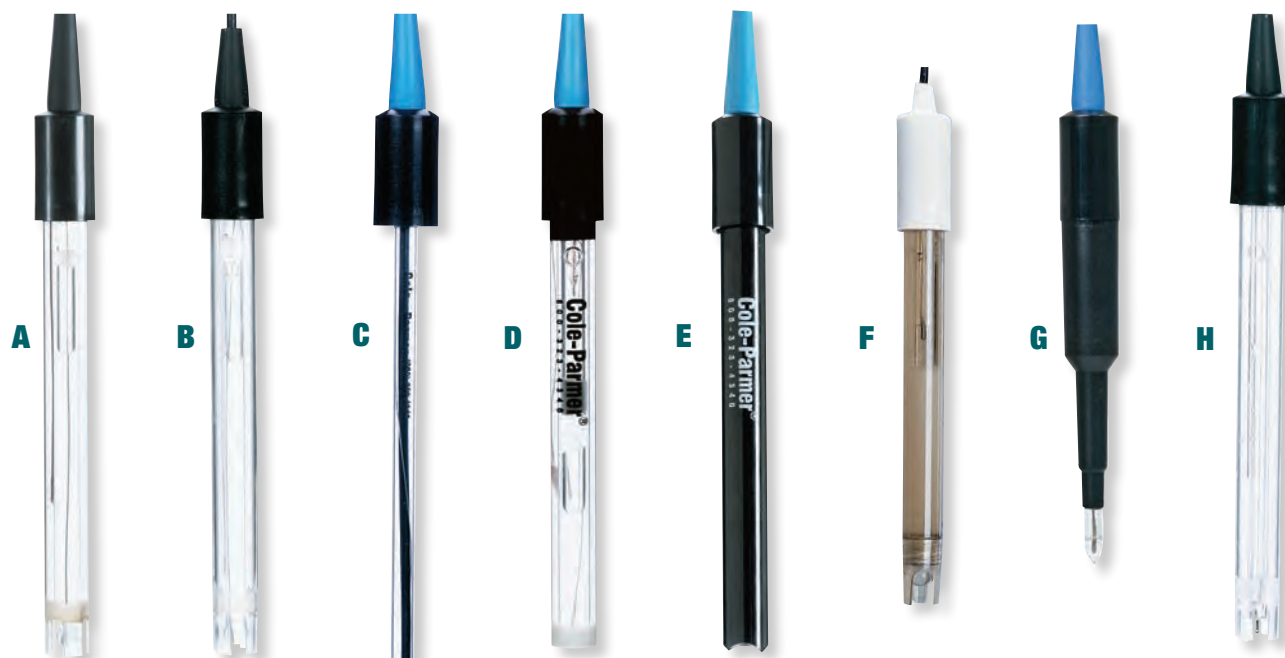
Cole-Parmer® Epoxy-Body Combination pH and ORP Electrodes

Get fast, stable readings

- Impact resistant—epoxy-body housing for added strength
- Ideal for your general-purpose applications in the lab or field
- Compatible with most brands of pH meter

These electrodes are ideal for prolonged pH or ORP readings. Electrodes with sealed, gel-filled design require virtually no maintenance. Electrodes with PTFE reference-junction offer extended electrode life. All listed electrodes have Ag/AgCl reference cells.

What's included: 3.3-ft (1-m) cable with BNC connector.



Key	Description	Reference junction	Type	Maximum temperature	Length x dia (mm)	Catalog number	Price
General-purpose pH electrodes							
A	General purpose	Single	Sealed	176°F (80°C)	127 x 12	TR-59001-65	
	For dirty samples	Double				TR-59001-70	
B	General purpose, refillable	Single	Refillable†	176°F (80°C)	148 x 12	TR-05992-30	
	For dirty samples, refillable	Double				TR-05991-12	
C	Extra-long neck for test tube sampling	Single	Sealed	176°F (80°C)	220 x 6	TR-05990-45	
D	Flat tip for surface or low-volume sampling	Single	Sealed	176°F (80°C)	127 x 12	TR-05990-65	
PTFE reference-junction pH electrodes (clog resistant)							
E	General purpose	Single	Sealed	212°F (100°C)	110 x 12	TR-05992-00	
	For dirty samples	Double				TR-05992-02	
Special-purpose pH electrodes							
F	Coiled-cable for dirty samples	Double	Sealed	176°F (80°C)	140 x 12	TR-05993-28	
G	Spear-tip for dirty samples				110 x 10	TR-59002-24	
ORP electrodes							
A	General purpose	Single	Sealed	176°F (80°C)	127 x 12	TR-59001-75	
	For dirty samples	Double				TR-59001-77	
H	General purpose, refillable	Single	Refillable††	176°F (80°C)	155 x 12	TR-05990-55	

†Use fill solution 05992-48 ††Use fill solution 05992-47

Accessories

[TR-05992-48](#) Reference fill solution, 4 M KCl. Two 125-mL bottles

[TR-05992-47](#) Reference fill solution, 3.8 M KCl with AgCl. Two 125-mL bottles

[TR-05983-25](#) Adapter, BNC to US standard plug meter

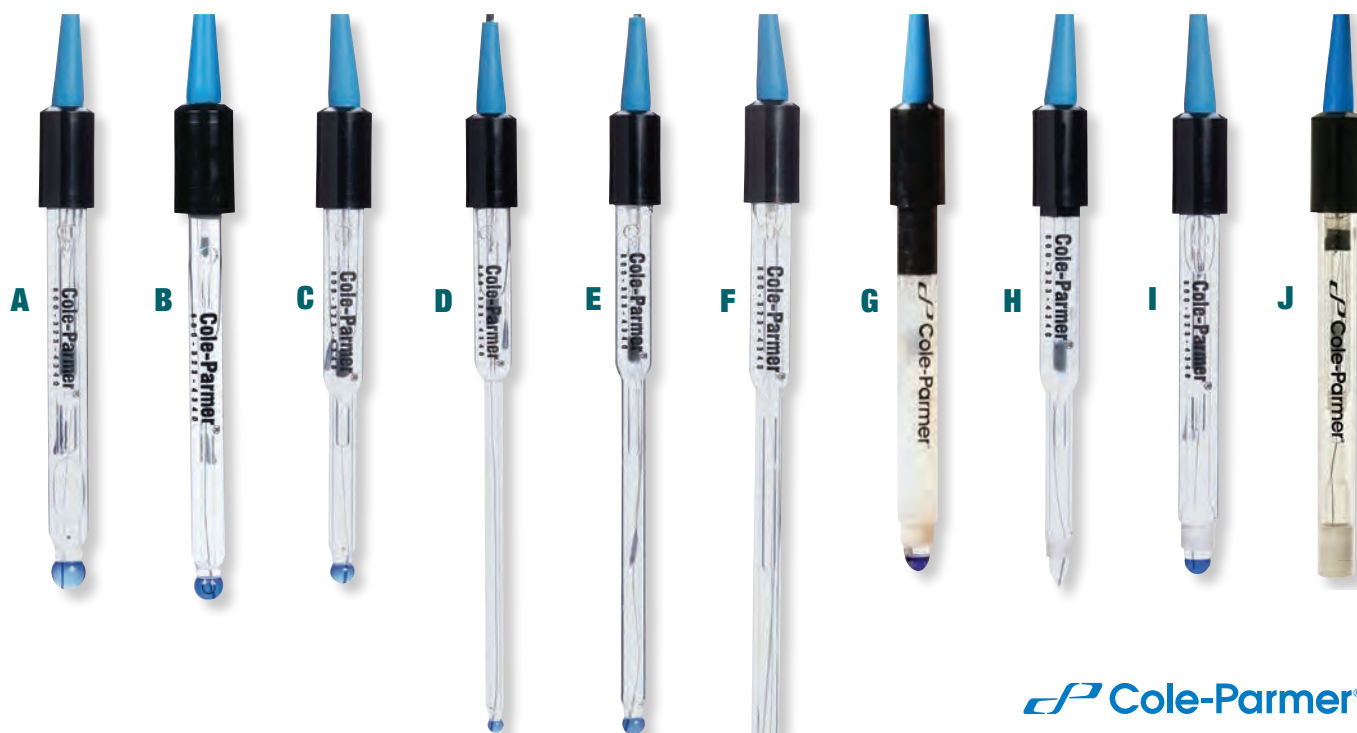
Cole-Parmer® Glass-Body Combination pH and ORP Electrodes

Faster response and increased stability across 0 to 14 pH range

- More durable—dome bulb for better protection from breakage
- Withstand higher temperatures and chemical attack
- Get more stability in low-ionic strength solutions
- Resistant to Na⁺ ion interferences
- Compatible with most brands of pH meters

Available as refillable or sealed design for single, double, and annular Ag/AgCl junctions. Single-junction is ideal for clean samples; double junction is compatible with sulfates, Tris, and proteins; and annular junction is ideal for dirty samples.

What's included: 3.3-ft (1-m) cable and BNC connector.



Key	Description	Reference junction	Type	Maximum temperature	Length x dia (mm)	Catalog number	Price
General-purpose pH electrodes							
A	General-purpose, laboratory	Single	Refillable	212°F (100°C)	154 x 12	TR-05991-22	
	General-purpose for TRIS, sulfates, proteins	Double			154 x 12	TR-59001-34	
B	Rugged, low maintenance	Single	Sealed	212°F (100°C)	123 x 9.5	TR-05991-81	
	Rugged for TRIS, sulfates, proteins	Double			124 x 9.5	TR-59001-36	
C	General-purpose, thin neck	Single	Refillable†	212°F (100°C)	154 x 8	TR-05991-42	
D	Long neck for small test tubes				210 x 6	TR-05991-61	
E	Long neck for large test tubes				210 x 8	TR-05991-51	
F	Extra-long neck for flasks and bottles				326 x 8	TR-05990-40	
Special-purpose pH electrodes							
G	High temperature, KNO ₃ gel	Double	Sealed	248°F (120°C)	130 x 12	TR-05998-30	
H	Spear tip for piercing semisolids and foods	Single	Sealed	212°F (100°C)	159 x 8	TR-05998-20	
I	Soil electrode, eliminates "suspension effect"	Annular	Refillable†	212°F (100°C)	145 x 12	TR-05992-62	
J	Flat-tip for surface or low volume sampling	Double	Refillable†	212°F (100°C)	130 x 12	TR-05991-44	
ORP electrodes							
A	General purpose	Single	Sealed	212°F (100°C)	110 x 12	TR-05991-08	
	For dirty samples	Double				TR-05991-18	

†Use fill solution 05992-47.

Accessories

[TR-05992-47](#) Reference fill solution for refillable electrodes, 3.8 M KCl with AgCl. Two 125-mL bottles

[TR-05983-25](#) Adapter, BNC to US standard plug meter



Oakton® pH Buffer Solutions

Keep your readings accurate with these quality buffers

– Standardized against NIST-traceable pH references for meters with 0.01 resolution



pH	500-mL bottles			1-L bottles		4-L bottles				
	Catalog number	Price/ea	Catalog number	Price/cs of 12	Catalog number	Price/ea	Catalog number	Price/ea	Catalog number	Price/cs of 4
1.68	TR-00654-01		—		—		—		—	
4.01	TR-00654-00		TR-05942-21		TR-05942-22		TR-05942-24		TR-05942-25	
6.86	TR-00654-03		—		—		—		—	
7.00	TR-00654-04		TR-05942-41		TR-05942-42		TR-05942-44		TR-05942-45	
9.18	TR-00654-07		—		—		—		—	
10.00	TR-00654-08		TR-05942-61		TR-05942-62		TR-05942-64		TR-05942-65	
12.45	TR-00654-12		—		—		—		—	



Electrochemistry

Oakton® pH Buffer Pouches

Keep your accuracy even on the go!

- Single-use pouch—just tear, dip, calibrate
- Standardized to NIST-traceable pH references
- Sold in pack of 20 pouches



pH	Catalog number	Price/pk
4.01	TR-35653-01	
7.00	TR-35653-02	
10.00	TR-35653-03	
Rinse solution	TR-35653-00	

TR-35653-04 Buffer pouch assortment pack; contains five pouches each of pH 4, 7, and 10 buffers and rinse solution

Oakton® pH Buffer and pH Solution Packs

Maintain accuracy and your budget

- Save money by purchasing buffer pack
- Keep electrodes clean and stored correctly—solution pack adds 500-mL bottles of cleaning and storage solutions



Description	Qty/pk	Catalog number	Price/pk
pH buffer pack	3 bottles	TR-05942-10	
pH solution pack	5 bottles	TR-05942-15	

pH Accessories

Cole-Parmer® pH Buffers, NIST-Traceable Reference Materials

Feel more confident about accuracies

NEW

- Calibrated by ISO Guide 34 and ISO 17025 accredited laboratory—includes NIST-traceable certificate supplied by manufacturer
- Easy calibrations—include instructions and temperature compensation chart



pH	500-mL bottles		1-L bottles		4-L bottles	
	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
Colorless buffers						
4.01	TR-00651-00		TR-00651-30		TR-00651-70	
7.00	TR-00651-02		TR-00651-32		TR-00651-72	
10.00	TR-00651-04		TR-00651-34		TR-00651-74	
Color-coded buffers						
4.01 (red)	TR-00651-06		TR-00651-36		TR-00651-76	
7.00 (yellow)	TR-00651-08		TR-00651-38		TR-00651-78	
10.00 (blue)	TR-00651-10		TR-00651-40		TR-00651-80	

pH Buffer Capsules

No more wasted buffer

- Make only the buffer you need—empty one capsule into 100 mL of water and stir
- Accurate to ± 0.02 pH
- Ten capsules per vial



pH	Color	Catalog number	Price/vial
4.0	Orange	TR-05977-12	
7.0	Green	TR-05977-14	
9.0	Yellow	TR-05977-16	
10.0	Blue	TR-05977-18	

Cole-Parmer® Buffers

Eliminate cross-contamination

- Supplied with NIST-traceable calibration report stating accuracy at 25°C of ± 0.01 pH
- Convenient, single-use vials



pH	Six 100-mL vials		One 500-mL bottle	
	Catalog number	Price	Catalog number	Price
4.01	TR-00655-30		TR-00655-40	
7.00	TR-00655-32		TR-00655-42	
10.01	TR-00655-34		TR-00655-44	



Oakton® Electrode Cleaning and Storage Solutions

Clean electrodes make clean measurements

- Easily remove grease, protein, and other deposits with cleaning solution
- Make electrode last longer—store in our storage solution
- Choose 500-mL bottle or case of 24 500-mL bottles



Solution type	Catalog number	Price/ea	Catalog number	Price/cs
Cleaning	TR-00653-06		TR-35655-06	
Storage	TR-00653-04		TR-35655-04	

Thermo Scientific™ Orion™ pH Electrode Cleaning Kit

Get longer electrode life

- Restores performance of your electrode
- Remove protein, bacteria, oil, and grease with ease
- Includes one bottle each of cleaning solution, beaker, and pipette



NEW

Description	Catalog number	Price
pH electrode cleaning kit	TR-05730-70	

Accessories

[TR-05730-71](#) Replacement solution A for removal of proteins. Four 30-mL bottles, beaker, and pipette

[TR-05730-72](#) Replacement solution B for removal of bacteria. Four 60-mL bottles, beaker, and pipette

[TR-05730-73](#) Replacement solution C for general-purpose cleaning. Four 30-mL bottles, beaker, and pipette

[TR-05730-74](#) Replacement solution D for removal of oil and grease. Four 60-mL bottles, beaker, and pipette

Electrode Saver Bottles

Keeps electrodes in working order

- Protect against bumps, spills, and drying out
- Accepts electrodes up to 13 mm diameter



05990-99

Capacity (mL)	Dimensions (H x dia)	Catalog number	Price
50	4" x 1½" (10 x 3.8 cm)	TR-05990-99	
5	1¼" x 7/8" (4.4 x 2.2 cm)	TR-35805-50	

Thermo Scientific™ Orion™ pH Buffers

Color-coded for ease of use



- Standardized against NIST-traceable pH references for superior accuracy

Available in a 475-mL (pint) bottle and portable 5 x 60-mL convenience packs. The All-in-One™ pH buffer kits include a pint each of 4, 7, and 10 buffer; either ROSS™ or standard electrode storage solution; and electrode storage bottle.

pH	5 x 60-mL bottles		475-mL bottles	
	Catalog number	Price	Catalog number	Price
1.68	TR-55350-26		TR-55350-28	
4.01	TR-55350-40		TR-55350-42	
5.00	—		TR-55350-38	
6.86	TR-55350-54		TR-55350-56	
7.00	TR-55350-44		TR-55350-46	
9.18	TR-55350-58		TR-55350-60	
10.01	TR-55350-48		TR-55350-52	
12.46	TR-55350-62		TR-55350-64	

[TR-55350-66](#) ROSS All-in-One pH buffer kit

[TR-55350-68](#) Standard All-in-One pH buffer kit

Thermo Scientific™ Orion™ ORP Standards

No hazardous chemicals or organics

- No more mixing—stable and ready to use
- Use as relative mV standard and calibrate offset of sample
- Redox potential values are 215 mV for Ag/AgCl reference electrodes and 420 mV for standard hydrogen reference electrodes



Description/packaging	Catalog number	Price
One-pint (475-mL) bottle	TR-05730-55	
Five 2-oz (60-mL) bottles	TR-05730-57	

Oakton® pH/mV Simulator

Ensure proper calibration

- pH buffer and mV value simulation allows for easy meter checks
- Push-button operation
- Select from USA or NIST buffers and mV output

Additional features include 1 ΩG high-impedance test, BNC connector, and low-battery indicator.



Accuracy	Power	Catalog number	Price
pH: 0.05; mV:2	Four AAA batteries (included)	TR-35652-00	



EM Quant® Water Test Strips

Don't risk water quality— perfect for quick spot checks

- Simply dip and read against included color chart—get results in minutes



Testing parameter	Graduations	Catalog number	Qty/pk	Price/pk
Ammonium†	0, 10, 30, 60, 100, 200, 400 ppm	TR-99572-01	50	
Chloride	0, 500, 1000, 1500, 2000, 3000 ppm	TR-99572-03	100	
Copper	10 to 300 ppm	TR-99572-14	100	
Cyanide†	0, 1, 3, 10, 30 ppm	TR-99572-04	100	
Lead†	0, 20, 40, 100, 200, 500 ppm	TR-99572-06	100	
Nickel	0, 10, 25, 100, 250, 500 ppm	TR-99572-07	100	
Nitrate	10 to 500 ppm	TR-99572-13	100	
pH	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 pH	TR-99572-08	6 pks of 100	
Total hardness	0, 50, 70, 125, 250, 370 ppm	TR-99572-10	100	
Total hardness	90, 180, 270, 360, 450 ppm	TR-99572-11	100	

†Kit includes reagent(s) to facilitate test.

LaMotte® Sanitizer Strength Test Strips

Quickly test your sanitizer strength

- No more waiting for results—simply compare color change to chart to get results
- Keep strips safe in included waterproof vial
- Get a longer shelf life from QAC strips 99535-30 with included desiccant cap



Parameter	Testing range	Catalog number	Qty/vial	Price/vial
QAC	50, 100, 200, and 400 ppm	TR-99532-30	100	
Chlorine	10, 50, 100, and 200 ppm	TR-99532-31	200	
Chlorine, HR	0, 50, 100, 250, 500, and 800 ppm	TR-99532-36	50	
Iodine	12, 25, 50, and 100 ppm	TR-99532-32	200	
Chlorine dioxide	0 to 10 ppm	TR-99532-33	50	
Chlorine dioxide	0 to 500 ppm	TR-99532-34	50	
Peracetic acid	0, 10, 20, 40, 60, 85, and 160 ppm	TR-99532-35	50	

Electrochemistry

Water Testing

Cole-Parmer® Dye Tracers

Know your water flow

- Won't harm the environment—nontoxic and biodegradable
- Easy-to-use color in rapidly diffusing dye identifies dispersion patterns, flow rates, seepage, and more
- Noncarcinogenic fluorescent red dye is ideal for yellowed or heavily algaed water
- For silt-filled water, use fluorescent yellow/green dye
- Use a UV lamp to easily view results where visual detection is difficult with red, yellow/green, or orange dyes
- Brighten murky ponds with blue dye
- Minimum detectable concentration is 1 ppm



Description	Size	Max gallons of water to obtain 1 ppm	Fluorescent red dye		Fluorescent yellow/green dye		Blue dye		Fluorescent orange dye	
			Catalog number	Price	Catalog number	Price	Catalog number	Price	Catalog number	Price
Quick-dissolving tablets	200 tablets	60 (red, ylw/grn) 35 (orange) 20 (blue) all per tablet	TR-00295-16		TR-00295-17		TR-00295-18		TR-00295-19	
Concentrate	Pint	3,125 (red) 12,500 (ylw/grn, blue) 4,000 (orange)	TR-00298-16		TR-00298-17		TR-00298-18		TR-00298-19	
Concentrate	Gallon	25,000 (red) 100,000 (ylw/grn, blue) 32,000 (orange)	TR-00298-06		TR-00298-07		TR-00298-08		TR-00298-09	
Powder	Pound	60,400 (red, orange) 120,000 (ylw/grn, blue)	TR-00298-26		TR-00298-27		TR-00298-28		TR-00298-29	

*Discount: Save 10% when you buy eight 200-tablet bottles.



Cole-Parmer® Symmetry® PT Toploading Balances

Large weighing surface allows placement of a variety of samples

NEW



- Weighing modes include parts counting, percent weighing, checkweighing, animal/dynamic weighing and density determination
- USB and RS-232 interfaces offer connection to a computer or printer for GLP/GMP-compliant outputs
- Sealed keypad, splashproof design, and removable stainless steel weighing pan
- An oversized backlit LCD provides clear visibility of weighing results
- Digital filters compensate for vibration, drafts or temperature changes
- Fast stabilization and response time

What's included: AC power adapter. The 210-g and 410-g models also include a draft shield.



Specifications

Calibration: Internal or external with calibration mass

Weighing units: g, ct, oz, dwt, mg, grains, oz, ozt, dwt, custom

Power: 115/220 VAC power adapter and built-in rechargeable battery pack (battery function not available on models 10001-06, -07, -13)

Capacity	Readability	Repeatability	Linearity	Pan size	Cat. no.	Price
Internal calibration						
210 g	0.001 g	±0.002 g	±0.002 g	5 1/8" x 5 1/8" (13.0 x 13.0 cm)	TR-10001-10	
410 g	0.001 g	±0.002 g	±0.002 g		TR-10001-11	
2200 g	0.01 g	±0.02 g	±0.02 g	7 1/2" x 6 1/4" (19.0 x 16.0 cm)	TR-10001-12	
4200 g	0.01 g	±0.02 g	±0.02 g		TR-10001-13	
External calibration						
210 g	0.001 g	±0.002 g	±0.002 g	5 1/8" x 5 1/8" (13.0 x 13.0 cm)	TR-10001-02	
410 g	0.001 g	±0.002 g	±0.002 g		TR-10001-03	
2200 g	0.01 g	±0.02 g	±0.02 g	7 1/2" x 6 1/4" (19.0 x 16.0 cm)	TR-10001-04	
4200 g	0.01 g	±0.02 g	±0.02 g		TR-10001-05	
5000 g	0.1 g	±0.2 g	±0.4 g		TR-10001-06	
15000 g	0.1 g	±0.2 g	±0.4 g		TR-10001-07	

Accessories

[TR-11120-78](#) Compact thermal printer

[TR-10000-47](#) Kensington™ type security lock and cable

[TR-17101-52](#) NIST-traceable calibration with data for balances

Cole-Parmer® Symmetry® PA Analytical Balances

Discover Symmetry—affordable, advanced, accurate

NEW



Symmetry®

- Three-door glass draft shield provides easy access inside the weighing chamber
- Oversized backlit LCD provides clear visibility of weighing results
- Sealed keypad, splashproof design, and removable stainless steel weighing pan offer safeguards in a messy lab environment
- Weighing modes include parts counting, percent weighing and checkweighing
- USB and RS-232 interfaces offer connection to a computer or printer for GLP/GMP-compliant output
- Digital filters compensate for vibration, drafts or temperature changes
- Selectable multi-language display and output
- Fast stabilization and response time



Specifications

Calibration: Internal or external with calibration mass

Weighing units: g, ct, oz, dwt, mg, grains, oz, ozt, dwt, custom

Power: 115/220 VAC power adapter

What's included: AC power adapter and draft shield.

Capacity	Readability	Repeatability	Linearity	Pan size	Catalog number	Price
Internal calibration						
120 g	0.0001 g	±0.0002 g	±0.0002 g	3 1/2" dia (9.0 cm)	TR-10001-08	
220 g	0.0001 g	±0.0002 g	±0.0002 g		TR-10001-09	
External calibration						
120 g	0.0001 g	±0.0002 g	±0.0002 g	3 1/2" dia (9.0 cm)	TR-10001-00	
220 g	0.0001 g	±0.0002 g	±0.0002 g		TR-10001-01	

Accessories

[TR-11120-78](#) Compact thermal printer

[TR-10000-47](#) Kensington™ type security lock and cable

[TR-17101-52](#) NIST-traceable calibration with data for balances

OHAUS® Scout® Pro Portable Balances

Superior performance and easy two-button operation

- Excellent shock resistance and overload protection
- Parts counting with auto optimization, % weighing, totalization, and display hold
- Software lock switch and integrated transport lock
- Optional snap-in RS-232 and USB interfaces are easy to install

What's included: weigh-below hook, AC adapter, calibration mass (200-, 400- and 600-g models). Operate on four AA batteries (order separately).



Specifications

Calibration: external, with calibration mass
Weighing units: g, kg, oz, lb, lb:oz, t, dwt
Power: four AA batteries (not included); 115 or 230 VAC (adapter included)



Capacity	Readability	Repeatability	Linearity	Pan size	115 VAC		230 VAC	
					Catalog number	Price	Catalog number	Price
200 g	0.01 g	±0.01 g	±0.01 g	4 3/4" (12.1 cm) dia	TR-11010-50		TR-11010-51	
400 g					TR-11010-52		TR-11010-53	
400 g					TR-11010-54		TR-11010-56	
600 g	TR-11010-69		TR-11010-70					
600 g	TR-11010-57		TR-11010-58					
2000 g	0.1 g	±0.1 g	±0.1 g		5 1/2" L x 6 1/2" W (14.0 x 16.5 cm)	TR-11010-59		TR-11010-60
4000 g				TR-11010-61			TR-11010-63	
6000 g				TR-11010-71			TR-11010-72	
6000 g				TR-11010-64			TR-11010-65	
6000 g	1 g	±1 g	±1 g					

[TR-11010-55](#) Security cable

[TR-11010-92](#) Cable interface, RS-232

[TR-11010-94](#) Cable interface, USB

[TR-11901-59](#) Dot matrix impact printer

[TR-11901-47](#) Thermal printer

[TR-09376-01](#) Batteries, AA. Pack of 4

[TR-17101-52](#) NIST-traceable calibration with data for balances

OHAUS® MB Moisture Determination Balances

State-of-the-art heating and weighing technology

- Straightforward operation speeds up routine testing applications and accommodates operators of all skill levels

MB23 and MB25 Basic Moisture Analyzers offer weighing capacity up to 110 g, large backlit LCD, standard RS-232 port, and choice of infrared or halogen heating.

MB35 Standard Moisture Analyzer features a maximum weighing capacity of 35 g, simplified user interface with 3-key navigation and setup, and straightforward one-step testing procedure.

MB45 Advanced Moisture Analyzer features an integrated database to store up to 50 test procedures and four automatic drying programs for easy one-step drying. Built-in statistical function provides simple tracking and recording of standard deviation over time.

What's included: 50 sample pans, fiber pads, in-use cover, and 6-ft (1.8-m) power cord. Standard and Advanced models also include a sample pan holder.



01002-82



Specifications

Calibration: external, with calibration mass

Weighing units:
Basic: g, or % moisture, temperature, time
Standard and Advanced: % moisture, % solids, % regain, statistics, time, temperature, weight (g), test ID, drying curve

Timer:
Basic: 1 to 99 minutes, 30-sec to 60-min increments
Standard and Advanced: 1 to 120 min, 10-sec increments

Model	Capacity	Readability	Repeatability (3-g sample)	Heater type	Temperature range	Pan size (dia)	120 VAC		230 VAC	
							Cat. no.	Price	Cat. no.	Price
MB23 Basic	110 g	0.001 g	±0.3%	Infrared coil	50 to 160°C	3 1/2" (8.9 cm)	TR-01002-81		TR-01002-86	
MB25 Basic	110 g	0.005 g	±0.2%	Halogen lamp			TR-01002-82		TR-01002-87	
MB35 Standard	35 g	0.002 g	±0.18%	Halogen lamp			TR-01002-83		TR-01002-88	
MB45 Advanced	45 g	0.001 g	±0.05%	Halogen lamp			TR-01002-84		TR-01002-89	

[TR-11901-47](#) Thermal printer

[TR-11901-55](#) RS-232 cable for use with thermal printer 11901-47

[TR-11901-53](#) Paper for use with thermal printer 11901-47

[TR-11901-59](#) Dot matrix printer

[TR-11901-63](#) RS-232 cable for use with dot matrix printer 11901-59

[TR-11901-61](#) Ink ribbon for use with dot matrix printer 11901-59

[TR-11901-60](#) Paper for use with dot matrix printer 11901-59

[TR-01018-22](#) Aluminum pan liners, 4 3/4" dia x 3/16" D (12.1 x 0.5 cm). Case of 1000

[TR-17101-52](#) NIST-traceable calibration with data for balances

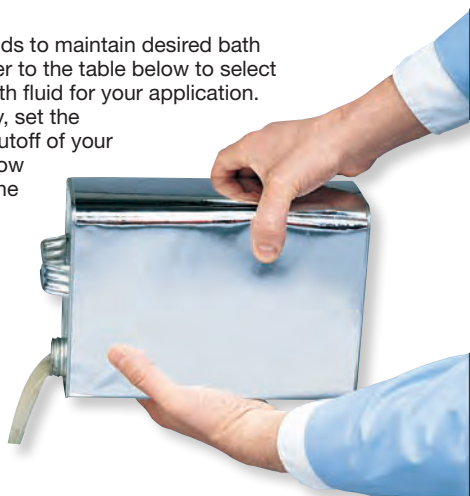


Bath Fluids

Get more out of your bath!

Use these bath fluids to maintain desired bath temperatures. Refer to the table below to select the appropriate bath fluid for your application.

For operator safety, set the overtemperature cutoff of your bath/circulator below the flash point of the bath fluid you use.



Fluid type	Silicone 210	Dynalene [®] HK-50	Silicone 200 20 (hot)	Silicone 710 (hot)
Catalog number	TR-01294-60	TR-01297-00	TR-01294-40	TR-01294-00
Specific gravity	0.98	0.85	0.95	1.11
Temperature range	-65 to 280°C	-50 to 58°C	10 to 149°C	150 to 250°C
Freezing point	—	-60°C	-84°C	-22°C
Flash point	288°C	65°C	246°C	302°C
Viscosity	98 cp at 26°C	2.35 cp at 25°C	18.98 cp at 25°C	33 cp at 99°C
Quantity	1 gal. (3.8 L)	1 gal. (3.8 L)	1 gal. (3.8 L)	1 gal. (3.8 L)
Price				

Note: Do not use automotive antifreeze with circulating baths—additives can be harmful to the circulating pump. Silicone fluids are not compatible with silicone tubing.

Cole-Parmer[®] Polystat[®] Cooling/Heating Circulating Baths

Get excellent cooling across range of temperatures

- Two-speed pump with up to 21 L/min flow
- Maximize bench space with compact size
- Protect samples and bath with high-temperature and low-level cut offs

Standard Digital Controller Baths feature five programmable set points, adjustable high-temperature cutoff, user-settable Min/Max temperature limits, and an adjustable pump nozzle.

Advanced Digital Controller Baths offer all the features of the Standard Digital models (except adjustable pump nozzle) plus five programmable set points, a two-stage (force/suction) pump for greater circulation capacity, and a USB port.

Specifications

Wetted materials: stainless steel, polymers

Low-level cutoff: yes



Bath capacity	Temperature range	Stability	Cooling capacity at 20°C	Pump type	Max pump pressure psi (mbar)	Max pump flow (L/min)	Working area (W x L x D)	Power (VAC, Hz)	Catalog number	Price
Standard digital controller baths										
6.5 L	-20 to 100°C	±0.05°C	250 W	Force	4.4 (310)	17	5 ⁵ / ₁₆ " x 4 ¹³ / ₁₆ " x 5 ⁷ / ₈ " (13.5 x 12.2 x 15 cm)	115, 60	TR-12122-02	
8.6 L	-28 to 100°C	±0.05°C	500 W	Force	4.4 (310)	17	6 ¹³ / ₁₆ " x 7 ³ / ₁₆ " x 5 ⁷ / ₈ " (17.3 x 18.3 x 15 cm)	115, 60	TR-12122-32	
								230, 50	TR-12122-34	
8.6 L	-28 to 150°C	±0.05°C	500 W	Force	4.4 (310)	17	6 ¹³ / ₁₆ " x 7 ³ / ₁₆ " x 5 ⁷ / ₈ " (17.3 x 18.3 x 15 cm)	115, 60	TR-12122-36	
								230, 50	TR-12122-38	
Advanced digital controller baths										
6.5 L	-20 to 100°C	±0.025°C	250 W	Force/suction	11.7 (750)	21	5 ⁵ / ₁₆ " x 4 ¹³ / ₁₆ " x 5 ⁷ / ₈ " (13.5 x 12.2 x 15 cm)	115, 60	TR-12122-12	
6.5 L	-20 to 100°C	±0.025°C	250 W	Force/suction	11.7 (750)	21	5 ⁵ / ₁₆ " x 4 ¹³ / ₁₆ " x 5 ⁷ / ₈ " (13.5 x 12.2 x 15 cm)	115, 60	TR-12122-26	
								230, 50	TR-12122-28	
8.6 L	-28 to 200°C	±0.025°C	500 W	Force/suction	11.7 (750)	21	6 ¹³ / ₁₆ " x 7 ³ / ₁₆ " x 5 ⁷ / ₈ " (17.3 x 18.3 x 15 cm)	115, 60	TR-12122-42	
8.6 L	-35 to 200°C	±0.025°C	800 W	Force/suction	11.7 (750)	21	6 ¹³ / ₁₆ " x 7 ³ / ₁₆ " x 5 ⁷ / ₈ " (17.3 x 18.3 x 15 cm)	115, 60†	TR-12122-56	
								230, 50†	TR-12122-58	

†Requires 20 amp current.

Cole-Parmer[®] Polystat[®] Cooling/Heating Recirculators

Save time with quick ramp up and cool-down

- Don't lose valuable bench space—powerful unit in a compact design
- Internal circulating tank design was built to minimize fluid evaporation
- Easy cooling for smaller instruments, jacketed reactors, and rotary evaporators
- Reliable, robust system maintains temperature to ±0.1°C and pumps to 21 L/min
- Includes funnel and 8- and 12-mm hose barb fittings



Specifications

Internal reservoir capacity: 2.8

Temperature stability: ±0.1°

Cooling capacity at 20°C	Temperature range	115 VAC, 60 Hz		230 VAC, 50 Hz	
		Catalog number	Price	Catalog number	Price
Force pump; 17 L/min flow rate; 4.4 psi (300 mbar) max pressure					
250 W	-10 to 80°C	TR-13042-01		TR-13042-03	
500 W	-10 to 80°C	TR-13042-17		TR-13042-19	
Force/suction pump; 21 L/min flow rate; 11 psi (805 mbar) max pressure					
250 W	-10 to 80°C	TR-13042-05		TR-13042-07	
500 W	-10 to 80°C	TR-13042-21		TR-13042-23	



Equipment & Instrumentation

Baths & Circulators

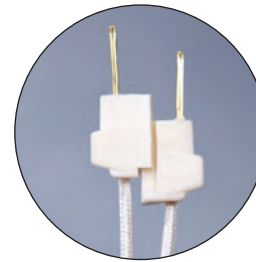
Cole-Parmer® StableTemp™ High-Temperature Heating Tapes

Get direct-contact heating on conductive surfaces

- Maximum exposure temperature of 1400°F (760°C)
- Choose from power leads on same end or on opposite ends for easier wrapping
- Heavy-duty insulated design
- Nongrounded

The 120 VAC tapes include a plug and the 240 VAC tapes are supplied with bare leads. The 120 VAC tapes with an opposite-end lead configuration are supplied with a half plug on each end; the half plugs fit together and connect to form a standard 120 VAC two-prong plug.

Warning: Heating tapes should not be overlapped and require the use of a temperature or power controller (sold separately).



Split plug



03105-20

StableTemp

Watts	Dimensions				Max exposure temperature	Leads emerging from same end		Leads emerging from opposite ends			
	Length		Width			120 VAC		120 VAC		240 VAC†	
	ft	m	in.	cm		Catalog number	Price	Catalog number	Price	Catalog number	Price
Fibrox® fiberglass insulated tapes											
105	2	0.6	½	1.3	900°F (482°C)	TR-36110-00		TR-03105-20		TR-03105-21	
210	4	1.2	½	1.3	900°F (482°C)	TR-36110-02		TR-03105-40		TR-03105-41	
310	6	1.8	½	1.3	900°F (482°C)	TR-36110-04		TR-03105-60		TR-03106-00	
520	10	3	½	1.3	900°F (482°C)	TR-36110-08		TR-03105-10		TR-03105-11	
420	4	1.2	1	2.5	900°F (482°C)	TR-36110-12		TR-03106-40		TR-03106-41	
620	6	1.8	1	2.5	900°F (482°C)	TR-36110-14		TR-03106-60		TR-03106-61	
830	8	2.4	1	2.5	900°F (482°C)	TR-36110-16		TR-03106-80		TR-03106-02	
418	4	1.2	1¼	4.4	900°F (482°C)	TR-36110-22		TR-03107-40		—	
Samox® fiberglass insulated tapes											
470	6	1.8	½	1.3	1400°F (760°C)	TR-36115-04		TR-03115-60		TR-03115-61	
627	8	2.4	½	1.3	1400°F (760°C)	TR-36115-06		TR-03115-80		TR-03115-81	
783	10	3	½	1.3	1400°F (760°C)	TR-03106-06		TR-03106-07		TR-03106-08	
313	2	0.6	1	2.5	1400°F (760°C)	TR-36115-10		TR-03117-20		TR-03117-21	
627	4	1.2	1	2.5	1400°F (760°C)	TR-36115-12		TR-03117-40		TR-03106-09	
940	6	1.8	1	2.5	1400°F (760°C)	TR-03106-11		TR-03106-12		TR-03117-60	
1245	8	2.4	1	2.5	1400°F (760°C)	—		—		TR-03117-80	
1570	10	3	1	2.5	1400°F (760°C)	—		—		TR-03106-13	

Equipment & Instrumentation

Cole-Parmer® StableTemp™ Dual-Element Heating Tapes

Greater flexibility than other high-temperature heating tapes

StableTemp



Dual-element design improves the heater's flexibility over standard high-temperature tapes. Tapes are made of two heating elements that are knitted together in series and then wound together with high-temperature Samox® fiberglass. The 120 VAC tapes include a plug and the 240 VAC tapes are supplied with bare leads.

Warning: Heating tapes should not be overlapped and require the use of a temperature or power controller sold separately.

Watts	Dimensions		Max exposure temperature	120 VAC tapes		240 VAC tapes†	
	Length	Width		Catalog number	Price	Catalog number	Price
156	2 ft (0.6 m)	½" (1.3 cm)	1400°F (760°C)	TR-36050-00		TR-36050-05	
312	4 ft (1.2 m)	½" (1.3 cm)	1400°F (760°C)	TR-36050-10		TR-36050-15	
468	6 ft (1.8 m)	½" (1.3 cm)	1400°F (760°C)	TR-36050-20		TR-36050-25	
624	8 ft (2.4 m)	½" (1.3 cm)	1400°F (760°C)	TR-36050-30		TR-36050-35	
780	10 ft (3 m)	½" (1.3 cm)	1400°F (760°C)	TR-03106-26		TR-36050-45	
936	12 ft (3.7 m)	½" (1.3 cm)	1400°F (760°C)	TR-03106-27		TR-36050-55	
312	2 ft (0.6 m)	1" (2.5 cm)	1400°F (760°C)	TR-36050-60		TR-36050-65	
624	4 ft (1.2 m)	1" (2.5 cm)	1400°F (760°C)	TR-36050-70		TR-36050-75	
936	6 ft (1.8 m)	1" (2.5 cm)	1400°F (760°C)	TR-03106-28		TR-36050-85	
1248	8 ft (2.4 m)	1" (2.5 cm)	1400°F (760°C)	—		TR-36050-95	

†Plug not included.



36050-00

Heaters

Cole-Parmer® StableTemp™ Dry Block Heaters

Adjust to your needs

- Customizable to your needs—blocks available (below) for microtubes, centrifuge tubes, vials, microplates, and PCR strips or tube

Analog Dry Block Heaters. Economical temperature controllers are adjustable with separate high and low temperature control knobs.

Digital Dry Block Heaters. Proportional integrative derivative (PID) controller allows you to select a particular temperature with ease, enables rapid heat-up, and provides excellent stability to maintain results. No hot spots—units have exceptional temperature uniformity and digital display shows set and actual temperature. Additional features include timer, audible alarm, and built-in temperature calibration mode.

External Temperature Probe Kit enables the digital heaters to read block or sample temperature and display it on the control panel. The RTD probe fits into the thermometer well located within each modular block.

Caution! To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed to run as a dry bath/incubator.



Interchangeable blocks—change as your needs change

StableTemp

36600-01 shown with 36600-68



Find even more online! Go to ColeParmer.com to search more than 100,000 products.

Number of blocks accepted	Uniformity	Temperature range	Power		Catalog number	Price
			VAC	Watts		
Analog dry block heaters						
1	±0.1° within the block at 98°F (37°C)	Low range: ambient to 212°F (ambient +5°C to 100°C) High range: 167 to 302°F (75 to 150°C)	120	110	TR-36600-12	
			230	110	TR-36600-13	
2	±0.1° within the block at 98°F (37°C), ±0.1° across similar blocks at 98°F (37°C)		120	210	TR-36600-14	
			230	210	TR-36600-15	
3	±0.1° within the block at 98°F (37°C), ±0.15° across similar blocks at 98°F (37°C)		120	210	TR-36600-16	
			230	210	TR-36600-17	
Digital dry block heaters						
1	±0.1° within the block at 98°F (37°C)	Ambient to 248°F (ambient to 120°C)	120	110	TR-36600-01	
			230	110	TR-36600-02	
2	±0.1° within the block at 98°F (37°C), ±0.1° across similar blocks at 98°F (37°C)		120	210	TR-36600-03	
			230	210	TR-36600-04	
3	±0.1° within the block at 98°F (37°C), ±0.15° across similar blocks at 98°F (37°C)		120	210	TR-36600-06	
			230	210	TR-36600-07	
Digital dry block heaters with heated lid						
2	±0.1° within the block at 98°F (37°C), ±0.1° across similar blocks at 98°F (37°C)	Ambient to 248°F (ambient to 120°C)	120	400	TR-36600-69	
			230	400	TR-36600-70	

[TR-36600-68](#) Optional external temperature probe kit

Cole-Parmer® StableTemp™ Modular Blocks for Dry Block Heaters

No need to buy a new heater—easy switchout for new requirements

- Get maximum heat-up and retention with close contact of tubes to wall
- Constructed of solid anodized aluminum for durability
- Know the actual temperature of your wells—thermometer well for easy block temperature measurement

Single block dimensions (L x W x H): 3¾" x 3" x 2" (9.5 x 7.6 x 5.1 cm). Double block sizes are available online to fit 2/4/6-block heaters.

Microcentrifuge Tube Blocks (single block size)

Accommodates	No. of wells	Well dia.	Well depth	Catalog number	Price
0.5 mL tube	30	7.9 mm	27.6 mm	TR-36600-22	
1.5 mL tube	20	11.1 mm	39.1 mm	TR-36600-23	
1.5 mL Eppendorf® tube	20	11.5 mm	36.9 mm	TR-36600-24	
2 mL Eppendorf tube	20	11.5 mm	38.1 mm	TR-36600-25	
2 mL Corning® tube	20	10.9 mm	38.1 mm	TR-36600-26	

StableTemp



Find even more online! See more block options at ColeParmer.com

Conical-Bottom Centrifuge Tube Blocks (single block size)

Accommodates	No. of wells	Well dia.	Well depth	Catalog number	Price
15 mL tube	12	17.1 mm	44.5 mm	TR-36600-28	
50 mL tube	5	29 mm	47.6 mm	TR-36600-29	

Equipment & Instrumentation

Heaters

Cole-Parmer® LabGEN® 125 and 700 Homogenizer Systems

Process almost any sample, large or small!

- Process samples from 0.05 mL to 10 L
- Variable-speed motor performs at 5000 to 30,000 rpm
- Homogenize tissue samples quickly and efficiently—without worrying about cross-contamination
- Versatile—use as a handheld unit or mount to the optional stand for hands-free operation

LabGEN 125 Homogenizer is ergonomically designed to reduce hand strain during extended periods of operation. **LabGEN 125 Homogenizing Kits** contain everything you need to get started, including 12 plastic tip probes, tip adaptor, and a storage case.

LabGEN 700 Homogenizer is a versatile heavy-duty unit that can handle virtually any homogenizing task—dispersion, tissue processing, cell disruption, and preparing emulsions. Process samples from 0.05 mL to 10 L at speeds up to 30,000 rpm.



REQUIRED System Components

- 1) Homogenizer
 - 2) Rotor-stator generator OR
 - 3) Plastic tip probes and required tip adaptor 04727-88
- OPTIONAL**
- 4) Stand and Motor support rod



1. Homogenizers

Description	Sample volume	Plastic tip probes included	Power	Motor	Catalog number	Price
LabGEN 125 homogenizer	0.05 to 100 mL	—	115 VAC, 50/60 Hz	125 W	TR-04727-01	
			220 VAC, 50/60 Hz		TR-04727-02	
LabGEN 125 homogenizer kits (include LabGEN 125 homogenizer, 12 plastic tip probes, tip adaptor 04727-88, and storage case)	0.25 to 30 mL	12 hard tissue	115 VAC, 50/60 Hz	125 W	TR-04727-11	
			220 VAC, 50/60 Hz		TR-04727-12	
		12 soft tissue	115 VAC, 50/60 Hz	TR-04727-13		
			220 VAC, 50/60 Hz	TR-04727-14		
LabGEN 700 homogenizer	0.05 mL to 10 L	—	115 VAC, 50/60 Hz	700 W	TR-04727-03	
			220 VAC, 50/60 Hz		TR-04727-04	

2. Stainless Steel Rotor-Stator Generators

Dispersion type	Sample volume	Diameter	Length	Catalog number	Price
Fine	0.05 to 5 mL	5-mm	75	TR-04727-60	
		5-mm		TR-04727-62	
Coarse	0.25 to 30 mL	7-mm	95	TR-04727-68	
Fine		10-mm		TR-04727-77	
Fine		10-mm		TR-04727-77	
Fine		10-mm		TR-04727-81	

3. Plastic Tip Probes

Sample volume	Tissue type	Tip size (L x dia)	Cat. no.	Qty/pk	Price/pk
0.25 to 30 mL	Hard	110 x 7 mm	TR-04727-84	25	
			TR-04727-85	50	

TR-04727-88 Tip adapter, required for use with plastic tip probes

4. Optional Stand

TR-04727-89 Homogenizer stand with support rod

Cole-Parmer® LabGEN® 7 Homogenizers

Don't be tied to a stand—unit can be mounted or handheld

- No more wasted time—processes 0.25- to 30-mL samples in less than one minute
- No more hand stress—lightweight unit is easy to clean and disassemble
- Powerful, yet quiet—variable speed from 5000 to 35,000 rpm

The LabGEN 7 homogenizer operates with a powerful 125-watt motor; ideal for most tissue samples. The portable LabGEN 7b is powered by a rechargeable battery for freedom of movement and to process soft tissues.

What's included: 7-mm generator probe and tool kit.



LabGEN®



Description	Probe included (L x dia)	Power	Catalog number	Price
LabGEN 7	3 1/8" x 7/64" (85 x 7 mm)	115 VAC	TR-04727-06	
		220 VAC	TR-04727-07	
Portable LabGEN 7b	3 1/8" x 7/64" (85 x 7 mm)	115 VAC	TR-04727-08	
		220 VAC	TR-04727-09	

Accessories

[TR-04727-16](#) Homogenizer stand

[TR-04727-17](#) Spare rechargeable battery for LabGEN 7b



Cole-Parmer® StableTemp™ General-Purpose Analog and Digital Incubators

Don't worry about your samples

- Over-range thermostat protects samples and alerts user
- Don't let temperature fluctuate while viewing samples with see-through polycarbonate doors†
- Easy-to-clean aluminum interior



StableTemp

Capacity cu ft (L)	Uniformity at 37°C	Dimensions (W x H x D)		Shelf positions	Shelves included	Power (VAC, Hz)	Shpg wt lb (kg)	Catalog number	Price
		Chamber	Overall						
Analog incubators , temperature range 10° above ambient to 90°C, stability at 37°C ±1°C									
5 (141.6)	±1.5°C	17" x 30" x 17" (43.2 x 76.2 x 43.2 cm)	19¼" x 36" x 23" (48.9 x 91.4 x 58.4 cm)	6	3	115, 60 230, 50	74 (33.6)	TR-01100-48 TR-01100-50	
Digital incubators , temperature range 10° above ambient to 90°C, stability at 37°C ±5°C									
0.5 (14.2)	±0.7°C	9½" x 9½" x 9½" (24.1 x 24.1 x 24.1 cm)	11½" x 15½" x 15½" (29.2 x 39.4 x 39.4 cm)	3	1	115, 60 230, 50	24 (10.9)	TR-01100-20 TR-01100-22 TR-01100-21† TR-01100-23†	
1.4 (39.6)		13½" x 13½" x 13½" (34.3 x 34.3 x 34.3 cm)	15¼" x 19½" x 19" (39.4 x 49.5 x 48.3 cm)	4	2	115, 60 230, 50	36 (16.3)	TR-01100-24 TR-01100-26	
2.5 (70.8)		17" x 15" x 17" (43.2 x 38.1 x 43.2 cm)	19¼" x 21" x 23" (48.9 x 53.3 x 58.4 cm)	5	2	115, 60 230, 50	48 (21.5)	TR-01100-28 TR-01100-30	

†Models 01100-21 and 01100-23 feature solid doors

Cole-Parmer® StableTemp™ Economical Gravity Convection Ovens

Save money while getting the features you need

- Durable powder-coated cold-rolled steel exterior
- Double-wall aluminum interior with 1"-thick (2.5 cm) silica-based insulation

These economical gravity convection ovens are designed for the budget-conscious laboratory needing to perform basic drying and baking applications. Temperature is controlled via a bimetallic thermostat from ambient ±5 to 210°C. All models feature a pilot light to indicate when the oven is in operation and a preset high temperature limit safety thermostat. Includes two adjustable chrome-plated wire shelves, one fixed shelf.



StableTemp



Specifications

Temperature range: ambient ±5°C to 210°C

Temperature accuracy: ±9°C at 100°C

Temperature display: glass thermometer (not included)

Capacity, cu ft (L)	Shelf positions	Dimensions (W x H x D), in. (cm)		Shpg wt lb (kg)	120 VAC, 60 Hz		230 VAC, 50/60 Hz	
		Chamber	Overall		Catalog number	Price	Catalog number	Price
1.7 (48.1)	3	16 x 16¼ x 11½ (41 x 41 x 29)	18½ x 22½ x 13½ (47 x 57 x 34)	57 (26)	TR-52120-02		TR-52120-03	

[TR-52100-50](#) Replacement shelf for ovens 52120-02 and -03

[TR-17002-30](#) NIST-traceable calibration with data for ovens

Digi-Sense® Blue Spirit Verification Bottle Thermometers

- Minimize fluctuations of readings
- Nonmercury blue spirit liquid on white background for easy reading
- Statement of accuracy and individual serial number for better record keeping
- Attach to a metal wall or door with magnetic attachment



Temperature range	Application	Bottle fill	Scale divisions	Accuracy	Length	Catalog number	Price
-90 to 25°C	Ultralow freezer	Propylene glycol	1°	±2°, 3° below -50°C	145 mm	TR-90300-69	
-5 to 20°C	Refrigerator	Ethylene glycol	0.5°	±1°	135 mm	TR-90300-72	
-30 to 1°C	Freezer	Propylene glycol	0.5°	±1°	135 mm	TR-90300-70	
-5 to 15°C	Refrigerator	Ethylene glycol	0.5°	±1°	125 mm	TR-90300-67	
15 to 50°C	Incubator	Ethylene glycol	0.5°	±1°	135 mm	TR-90300-68	
20 to 130°C	Oven	Vermiculite	1°	±2°	145 mm	TR-90300-71	
50 to 200°C	High-temp oven	Vermiculite	2°	±4°, 6° above 130°C	145 mm	TR-90300-73	



Equipment & Instrumentation

Incubators / Ovens

Compound Microscopes with LCD Tablet Display and Camera

Include everything you need to view and capture images

- View and edit images on large, 7" tablet touchscreen
- Share images with others using built-in Wi-Fi

NEW

These microscopes are an all-in-one image capture solution—built-in 7" (17.8 cm) LCD display allows you to view your specimen while the internal camera captures the image. Edit, measure, and annotate saved images directly on the touchscreen or on a computer with the included software. Display features an Android™ operating system and a micro-SD card slot for additional memory (SD card not included). Wi-Fi signal connects to a computer for image download and sharing.

Siedentopf binocular head allows for easy adjustability and the 20-mm eyepieces provide an increased field of view. Choose from semi-plan, plan, and phase contrast models; semi-plan and plan versions include an Abbe condenser; the phase-contrast version has a multi-phase, rack and pinion condenser.



Specifications

Display resolution: 1280 x 800
Stage dimensions (W x D): 142 mm x 140 mm
Imaging sensor: 1/2.5" CMOS, 5.0 megapixels
Output: USB, HDMI, SD car

Total magnification	Head	Eyepiece	Illumination	Power	Catalog number	Price
40x, 100x, 400x, 1000x (semi-plan)	Binocular	Widfield 10x/20 mm	3 W LED, variable	110/220 VAC	TR-48925-06	
40x, 100x, 400x, 1000x (plan)					TR-48925-07	
40x, 100x, 400x, 1000x (phase contrast)					TR-48925-08	

Handheld Digital USB Microscopes

Put the world of microphotography at your fingertips!

- Active Pixel Technology produces sharp images and accurate color reproduction
- Six built-in lights with adjustable brightness ensure proper illumination
- Includes software for image/video capture and measurement

For versions with the 10x to 200x magnification range, magnification automatically adjusts based on the distance from the object. Units include a basic stand with adjustable height; order optional boom or gooseneck stand for greater flexibility.



48708-20 shown with included stand

Magnification	10x to 200x	500x	10x to 200x	10x to 200x	10x to 200x	10x to 200x
Catalog number	TR-48708-20	TR-48708-22	TR-48708-23	TR-48708-25	TR-48708-26	TR-48708-28
Lighting	Six LEDs	Six LEDs	UV bulbs (405 nm)	Six LEDs w/polarizer	Six near-infrared LEDs	Six LEDs
Imaging sensor	1/4" CMOS	1/4" CMOS	1/4" CMOS	1/4" CMOS	1/2" CMOS	1/4" CMOS
Pixels	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	5,000,000
Resolution	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	2048 x 1536
Output	USB 2.0	USB 2.0	USB 2.0	USB 2.0	USB 2.0	USB 2.0
Power	5 VDC, via USB	5 VDC, via USB	5 VDC, via USB	5 VDC, via USB	5 VDC, via USB	5 VDC, via USB
Price						

[TR-48708-24](#) Optional boom stand

[TR-48708-29](#) Optional dual-view stand

[TR-48708-27](#) Optional gooseneck stand

Equipment & Instrumentation

Microscopes

Cole-Parmer® Slides

- Won't stick or scratch
- Easy to write on
- Measure 75 x 25 mm and 1-mm thick



Type	One gross (144 slides)		One case (10 gross)	
	Cat. no.	Price	Cat. no.	Price/cs
Plain	TR-48500-00		TR-48500-20	
Frosted	TR-48501-00		TR-48501-20	
Pink Colorfrost	TR-48503-02		TR-48503-22	

Clipped-Corner Slides

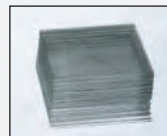
- Easily keep sample from edge
- Easy to write on
- Slides are 75 x 25 mm and 1-mm thick



Description	Catalog number	Price/gross
Plain	TR-48520-01	
Frosted	TR-48520-03	
Superfrost	TR-48520-05	

Cole-Parmer® Cover Glass

- Protect samples
- Choose from two thicknesses: no. 1 (0.13 to 0.17 mm) or no. 1.5 (0.16 to 0.19 mm)



Size	Thick-ness	Approx pieces /bx	Catalog number	Price /bx
Square (22 x 22 mm)	No. 1	156	TR-48510-00	
	No. 1.5	138	TR-48510-10	
Rectangular (22 x 40 mm)	No. 1	87	TR-48511-00	
	No. 1.5	76	TR-48511-10	
Rectangular (24 x 60 mm)	No. 1	54	TR-48511-30	



IKA® RW 20 Digital Dual-Range Mixer

No separate components to purchase—complete system is ready to go!

- No downtime—maintenance-free motor for continuous duty
- Fulfill all your lab mixing needs—two speed ranges for a variety of applications
- No need to move mixer head to reposition propeller—through-shaft design for easy movement
- No difficult controls—easy-to-use knob and LED display for accurate setting

Use this versatile, affordable mixer for liquid volumes up to 5 gallons (18.9 liters) and viscosities up to 10,000 cps (approximately the viscosity of honey). Select speed from 60 to 2000 rpm in two ranges for a variety of applications.

What's included: chuck (accepts up to 3/8" [10 mm] dia shafts), 6 1/4" L x 1/2" dia (159 mm L x 10 mm dia) mounting rod, four-blade propeller mixer stand, and clamp.



Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
60 to 500/ 240 to 2000	1/25	259	115, 50/60	TR-50705-00	
			230, 50/60	TR-50705-10	

Stir-Pak® Heavy-Duty Mixer Systems

Easily customize to your needs

1. Speed Controller

- Simple controls—speed adjustment knob and separate "forward/off/reverse" switch
- Reduce gear failure with torque limiting protection

2. Mixer Heads

- Don't limit your mixing angle—adjustable tilt from 0 to 30° for proper propeller placement
- Maintenance-free, rugged motor
- For more viscous or larger samples, choose a high-torque, low-speed mixer head with keyless chuck
- For lower viscosity samples, use a high-speed low-torque mixer head with through shaft for easy shaft positioning

Complete systems include: speed controller, mixer head, shaft, propeller, clamp and stand.



REQUIRED System Components

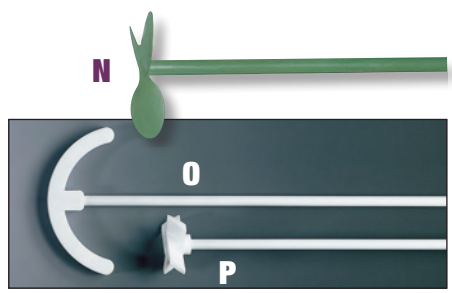
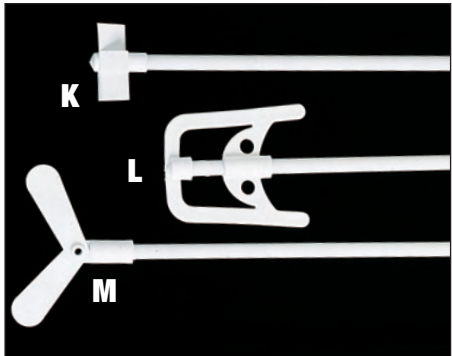
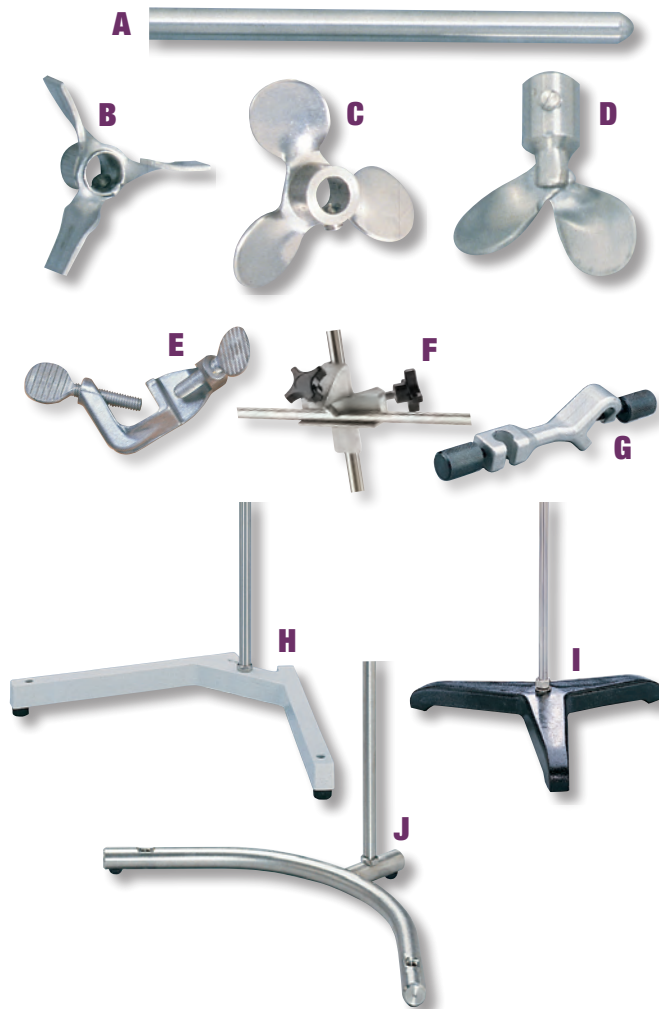
- 1) Speed controller
 - 2) Mixer head
- or choose complete system



1. Speed controller			2. Mixer heads						Complete systems		
Power (VAC, Hz)	Catalog number	Price	Description	Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price	Catalog number	Price
115, 50/60	TR-50007-00		High torque, low speed; with keyless chuck	2 to 180	1/15	340	115, 50/60	TR-50007-10		TR-50007-12	
230, 50/60	TR-50007-05						230, 50/60	TR-50007-15		TR-50007-17	
115, 50/60	TR-50007-00		High speed, low torque; with adjustable through-shaft collet	9 to 900	1/15	70	115, 50/60	TR-50007-20		TR-50007-22	
230, 50/60	TR-50007-05						230, 50/60	TR-50007-25		TR-50007-27	
115, 50/60	TR-50007-00		High speed, low torque; with adjustable through-shaft collet	23 to 2300	1/10	45	115, 50/60	TR-50007-30		TR-50007-32	
230, 50/60	TR-50007-05						230, 50/60	TR-50007-35		TR-50007-37	
115, 50/60	TR-50007-00						115, 50/60	TR-50007-40		TR-50007-42	
230, 50/60	TR-50007-05						230, 50/60	TR-50007-45		TR-50007-47	



Accessories for Laboratory Mixers



A. Shafts. All $\frac{3}{8}$ " (10 mm) dia shafts are machined on one end to accept a $\frac{5}{16}$ " (8 mm) bore dia propeller.

Key	Shaft dimensions, dia x L, in. (mm)	Catalog number	Price
A	$\frac{5}{16}$ x 12 (8 x 305)	TR-04552-20	
	$\frac{5}{16}$ x 18 (8 x 457)	TR-04552-30	
	$\frac{3}{8}$ x 12 (10 x 305)	TR-04552-25	
	$\frac{3}{8}$ x 18 (10 x 457)	TR-04552-35	
	$\frac{3}{8}$ x 24 (10 x 610)	TR-04552-00	
	$\frac{3}{8}$ x 30 (10 x 762)	TR-04552-05	

B. Turbine Propellers are for airless mixing in deep containers.

C. Marine-Style Propellers are for general-purpose mixing. Use alone or mount several on a single shaft for thorough agitation.

D. Folding Propeller is for use in narrow-mouth vessels. Folded diameter is $1\frac{1}{4}$ " (18 mm).

Key	Description	Bore dia in. (mm)	Overall dia in. (mm)	Catalog number	Price
B	Turbine style	$\frac{3}{8}$ (9.5)	2 (51)	TR-04552-15	
		$\frac{5}{16}$ (8)	2 (51)	TR-04552-10	
C	Marine style	$\frac{5}{16}$ (8)	1 (25)	TR-04552-40	
		$\frac{5}{16}$ (8)	1½ (38)	TR-04552-45	
		$\frac{5}{16}$ (8)	2 (51)	TR-04552-50	
		$\frac{3}{8}$ (9.5)	2 (51)	TR-04552-55	
		$\frac{3}{8}$ (9.5)	3 (76)	TR-04552-60	
D	Folding style	$\frac{5}{16}$ (8)	2 (51) open	TR-04543-00	

E-G. Clamps ensure a sturdy connection between mixer and stands.

Key	Catalog number	Price
E	TR-08041-22	
F	TR-04340-50	
G	TR-04560-24	

H. Stand. Corrosion resistant, electropolished cast steel base; 303 SS support rod. Both legs accept an extra support rod.

I. Mixer Stand has a cast-iron base and a stainless steel rod.

J. 316 SS Mixer Stand accepts extra screw-in support rods in both legs.

Key	Dimensions H x dia, in. (mm)	Stand		Extra support rod	
		Cat. no.	Price	Cat. no.	Price
H	29 x $\frac{5}{8}$ (737 x 16)	TR-04552-80		TR-04552-85	
I	24 x $\frac{5}{8}$ (610 x 16)	TR-04546-00		—	
J	29 x $\frac{5}{8}$ (737 x 16)	TR-04344-00		TR-04344-10	

K-P. Plastic Mixing Paddle Assemblies

Use these plastic paddle assemblies for mixing most acids and corrosive solutions. Plastic-coated steel assemblies provide better chemical resistance than stainless steel alone.

Material	Shaft, dia x L, in. (mm)	Max paddle dia, in. (mm)	Catalog number	Price
K. Fixed, dual-blade paddle assembly —for mixing medium-viscosity liquids				
Polypropylene	$\frac{5}{16}$ x $13\frac{1}{16}$ (8 x 350)	1½ (41)	TR-06367-10	
L. A-shaped, blade paddle assembly —for mixing highly viscous liquids				
Polypropylene	$\frac{5}{16}$ x $13\frac{1}{16}$ (8 x 350)	2½ (67)	TR-06367-20	
M. Swing-out, dual-blade paddle assembly —for use in narrow-necked vessels				
Polypropylene	$\frac{5}{16}$ x $13\frac{1}{16}$ (8 x 350)	2½ (60)	TR-06367-40	
	$\frac{5}{16}$ x $13\frac{1}{16}$ (8 x 350)	4 (102)	TR-06367-60	
N. Three-blade paddle assembly —for general-purpose mixing				
PTFE	$\frac{5}{16}$ x 12 (8 x 305)	2 (51)	TR-04449-06	
PTFE	$\frac{5}{16}$ x 18 (8 x 457)	2 (51)	TR-04449-10	
O. Anchor-style paddle assembly —for mixing medium- to high-viscosity liquids				
PTFE	$\frac{3}{8}$ x 22 (10 x 559)	4 (102)	TR-06367-70	
P. Four-blade paddle assembly —for mixing low- to medium-viscosity liquids				
PTFE	$\frac{3}{8}$ x $22\frac{1}{2}$ (10 x 562)	2½ (60)	TR-06367-80	



Cole-Parmer® Disposable Temperature Recorders

Save money while knowing temperature of samples

- Simple to use—just pull out tab to start recorder
- Unique identifier and tamper-evident seal makes sure data is not corrupt
- Water and shock resistant



Specifications

Range: -20 to 100°F (-28 to 38°C)
Chart: pressure-sensitive 36" strip chart
Temperature sensor: bimetal coil
Accuracy:
 Temperature: ±2°F (±1°C)
 Time: ±20 seconds per month average

Power: one AA alkaline battery (included)
Dimensions (W x H x D):
 4" x 5½" x 2½"
 (10.2 x 14.0 x 6.4 cm)



Create a permanent record of temperature conditions during shipment.

Chart speed	Catalog number	Price
5 days	TR-80150-40	
10 days	TR-80150-50	
20 days	TR-80150-60	
30 days	TR-80150-70	

200- and 250-mm Flatbed Recorders

Minimize the impact of external interference



- Reliability is ensured by secure mounting of electronics
- Get better control with separate pen lifts—allowing better independent control
- Features include zero suppression, range overload protection, fast forward/reverse, and variable gain to 250% for enhanced sensitivity

What's included: 5-ft (1.5-m) power cord with US plug, pen(s), and two rolls of chart paper.

Specifications

Input ranges: 1, 2, 5, 10, 20, 50, 100, and 200 mV; 0.5, 1, 2.5, 5, 10, 25, and 50 V
Accuracy: ±0.35% or ±10 µV
Chart size: 200 or 250 mm
Chart speeds: (16 total) 0.1, 0.2, 0.5, 1, 2, 5, 10, 20 mm/sec and mm/min

Input impedance: >30 MΩ in mV ranges; 2 MΩ in V ranges
Pen response (full-scale deflection):
 200-mm models: 0.18 second
 250-mm models: 0.20 second
Power: 115/230 VAC, 50/60 Hz



Number of channels	Chart width	Catalog number	Price
One	200 mm	TR-80380-20	
Two		TR-80380-30	
One	250 mm	TR-80380-40	
Two		TR-80380-50	

Cole-Parmer® Economical 100- and 200-mm Flatbed Recorders

Cost-effective way to record your data



Cole-Parmer 100- and 200-mm flatbed recorders combine accuracy with value. Measure reliably using the recorders' zero control, 12 selectable input ranges, and adjustable 5:1 attenuation.

What's included: 115 VAC adapter, one roll of paper, and pen.

Specifications

Input ranges: 1, 2, 5, 10, 20, 50, 100, 200, 500 mV; 1, 2, 5 V
Accuracy: ± 0.5% full-scale
Chart size: 100 or 200 mm
Chart speeds: 1, 2, 5, 10, 20, 30 cm/min and cm/hr

Input impedance: >1 MΩ
Attenuation: 5:1
Pen response: 0.5 sec full-scale
Power: 115 VAC, 12 VAC, or 12 to 15 VDC



Number of channels	Chart width	Catalog number	Price
One	100 mm	TR-80550-00	
Two		TR-80550-10	
One	200 mm	TR-80550-20	
Two		TR-80550-30	

Equipment & Instrumentation

Recorders

Vortex-Genie Shakers

Maximize high-speed touch mixing

– Won't "walk" across your benchtop

Vortex-Genie® 1 Shaker has a single high-speed mixing action that eliminates operator error for highly reproducible results. Includes pop-off cup; 3" (7.6-cm) platform sold separately below.

Vortex-Genie® 2 Shaker allows you to control speed intensity by varying pressure to the head. The variable speed shaking allows you to adjust the level of mixing from gentle shaking to vigorous vortexing. Easy-to-change platforms allow you to adapt your shaker to a variety of applications. Shaker comes with a pop-off cup for single tube shaking and a standard 3" (7.6-cm) platform for multiple tube or flask shaking. Order optional platform starter kits below to customize the shaker for your application.

Vortex-Genie® 2T Shaker features both touch and hands-free operation. Shake samples from 1 to 60 seconds in touch mode, 1 to 60 minutes in hands-free mode, or continuously in the automatic untimed mode. The 2T shaker accepts all standard Genie attachments and accessories making it an economical addition to your laboratory. Includes pop-off cup and 3" (7.6-cm) platform.

Digital Vortex-Genie® 2 Shaker features both touch and hands-free operation with increased timer range. Shake samples from 1 to 99 seconds in touch mode, 1 to 99 minutes in hands-free mode, or continuously in the automatic untimed mode. Digital display provides accuracy, reproducibility, and repeatability. Accepts all standard Genie attachments and accessories and includes pop-off cup and 3" (7.6-cm) platform.

Vortex-Genie® Pulse Shaker offers true pulsing action, providing more collisions and random motion. Ideal for applications requiring more aggressive action than standard vortexing. Fully programmable—the variable run/stop time provides quick pulsing or interval mixing to keep samples in suspension, or use in continuous mode for vortexing. Featuring digital control and display of speed and time, this shaker will deliver reproducible and accurate mixing. Accepts all standard Genie attachments and accessories and includes pop-off cup and 3" (7.6-cm) platform.

What's included: power cord with plug (no plug on 230 VAC models).



Speed range	Timer range		Platform dimensions	Power			Catalog number	Price
	Touch mode	Hands-free mode		VAC	Hz	Amps		
Vortex-Genie 1 shaker								
600 to 3200 rpm	—	—	1½" dia pop-off cup	120	60	0.65	TR-04724-10	
600 to 2700 rpm	—	—	3" dia platform	230	50/60	0.5	TR-04724-15	
Vortex-Genie 2 shaker								
600 to 3200 rpm	—	—	1½" dia pop-off cup,	120	60	0.65	TR-04724-00	
600 to 2700 rpm	—	—	3" dia platform	230	50/60	0.5	TR-04724-05	
Vortex-Genie 2T shaker								
600 to 3200 rpm	1 to 60 seconds	1 to 60 minutes	1½" dia pop-off cup,	120	60	0.65	TR-04724-20	
600 to 2700 rpm	seconds	minutes	3" dia platform	230	50/60	0.5	TR-04724-25	
Digital Vortex-Genie 2 shaker								
500 to 3000 rpm	1 to 99 seconds	1 to 99 minutes	1½" dia pop-off cup,	120	60	0.65	TR-04724-40	
			3" dia platform	230	50/60	0.5	TR-04724-45	
Vortex-Genie Pulse shaker								
500 to 3000 rpm	0.1 sec to 99 minutes	1 to 99 minutes	1½" dia pop-off cup,	120	60	0.65	TR-04724-38	
			3" dia platform	230	50/60	0.5	TR-04724-39	

[TR-04724-61](#) Platform with cover, 3" (7.6-cm) dia

[TR-04724-60](#) Replacement cup for single tube shaking

[TR-04724-70](#) Thermoplastic rubber cover protects standard 3" (7.6-cm) platform

[TR-04724-54](#) Small ampule shaker attachment

[TR-04724-55](#) Large ampule shaker attachment

[TR-04724-57](#) TurboMix™ shaker attachment

[TR-04724-63](#) Microtube holder for 12 x 2-mL tubes

[TR-04724-64](#) Vertical tube holder. Holds 3 x 50-mL tubes

[TR-04724-65](#) Vertical tube holder. Holds 6 x 15-mL tubes

[TR-04724-89](#) Vertical tube holder. Holds 6 x 50-mL, 6 x 15-mL, and 12 microtubes

[TR-04724-66](#) Vertical microtube holder. Holds 9 microtubes

[TR-04724-67](#) Molded bottom closure and screw kit

[TR-04724-83](#) Platform, 6" (15.2 cm)

[TR-04724-84](#) Recessed platform

[TR-04724-85](#) Tube insert†, foam; 9–16 mm. Set of 2

[TR-04724-86](#) Tube insert†, foam; 14–29 mm. Set of 2

[TR-04724-87](#) Tube insert†, foam; 29–37 mm. Set of 2

[TR-04724-88](#) Blank insert†, foam. Set of 2

†Requires recessed platform 04724-84 (sold separately above).



Beaker/Tube Platform Starter Kit includes one recessed platform for beakers up to 250 mL, two elastic bands, and one tube insert assortment set (Set includes one foam insert each for 9 to 16 mm, 14 to 29 mm, and 29 to 37 mm tubes; and one blank insert).

[TR-04724-80](#) Beaker/tube platform starter kit

[TR-04724-82](#) Replacement elastic bands†. Set of 2

[TR-04724-81](#) Replacement tube insert assortment†. Set of 4

†Requires recessed platform 04724-84 (sold separately at left).

Microtube/Microwell Plate Platform Starter Kit contains one 6" (15.2 cm) platform, one 6" (15.2 cm) foam insert for 60 microcentrifuge tubes, and one 6" (15.2 cm) foam insert for a single microwell plate.

[TR-04724-50](#) Microtube/microwell plate platform starter kit

[TR-04724-51](#) Replacement micro tube inserts† hold up to 60 microtubes. Pack of 2

[TR-04724-53](#) Double-tier microwell plate insert

†Requires platform 04724-83 (sold separately at left).



W. S. Tyler® Ro-Tap® E, Ro-Tap®, and Ro-Tap II® Sieve Shakers

Get reproducible hand-sieving without the hand shaking

– Set the time and walk away—99-minute digital timer with 0.1-second accuracy

Ro-Tap® E Sieve Shakers for 8" dia sieves are stand-alone benchtop units that are virtually maintenance-free, offer quiet operation and can be operated directly on a laboratory countertop. Options include automatic controlled amplitude, and in fine and coarse analysis settings.

Ro-Tap Sieve Shakers for 8" dia sieves hold up to six full-height or 13 half-height sieves with top cover and receiving pan. Shakers for 12" dia sieves hold up to four full-height or ten half-height sieves with top cover and receiving pan.

Ro-Tap II Sieve Shakers double your shaking capacity while maintaining the accuracy of a single mechanical shaker. Dual-capacity shakers hold up to 12 full-height sieves or 26 half-height sieves.



Ro-Tap shaker
59986-60



Ro-Tap E
shaker
59996-68



Ro-Tap II
dual-capacity
shaker
59986-50

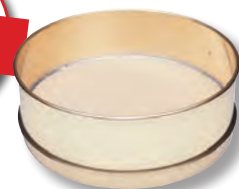
ISO9001:2008
CERTIFIED SUPPLIER

rpm	Power (VAC/Hz)	Dimensions (W x H x D)	Shpg wt lb (kg)	Catalog number	Price
Ro-Tap E shakers for 8" dia sieves					
1750	110/60	18" x 18" x 30"	80 (36)	TR-59996-68	
1450	220/50	(45.7 x 45.7 x 76.2 cm)		TR-59996-70	
Ro-Tap shakers for 8" dia sieves					
1750	110/60	28" x 25" x 21"	226 (102)	TR-59986-60	
1450	220/50	(71.1 x 63.5 x 53.3 cm)	170 (77.2)	TR-59986-62	
Ro-Tap shakers for 12" dia sieves					
1750	110/60	28" x 25" x 21"	180 (81.7)	TR-59996-60	
1450	220/50	(71.1 x 63.5 x 53.3 cm)	225 (102)	TR-59996-62	
Ro-Tap II shakers for 8" dia sieves					
1750	110/60	30" x 26" x 27"	230 (104)	TR-59986-50	
1450	220/50	(76.2 x 66.0 x 68.6 cm)	220 (99.8)	TR-59986-52	

Cole-Parmer® Brass and Stainless Steel Testing Sieves

Meet ASTM E11 specifications for compliance

These 8" diameter testing sieves are serialized and come with test sieve certificate. For our full selection of sieves, including 12" diameter sieves and sieves with NIST-traceable calibration report, go to www.coleparmer.com/sieves.



Cole-Parmer®

ISO9001:2008
CERTIFIED SUPPLIER

Sieve opening (mm)	US standard	Tyler standard	Brass frame/brass wire				SS frame/SS wire				Brass frame/SS mesh			
			Full height†		Half height†		Full height†		Half height†		Full height†		Half height†	
			Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
2.36	No. 8	8 mesh	TR-59980-00		TR-59981-00		TR-59984-00		TR-59985-00		TR-59940-00		TR-59941-00	
2.00	No. 10	9 mesh	TR-59980-01		TR-59981-01		TR-59984-01		TR-59985-01		TR-59940-01		TR-59941-01	
1.70	No. 12	10 mesh	TR-59980-02		TR-59981-02		TR-59984-02		TR-59985-02		TR-59940-02		TR-59941-02	
1.40	No. 14	12 mesh	TR-59980-03		TR-59981-03		TR-59984-03		TR-59985-03		TR-59940-03		TR-59941-03	
1.18	No. 16	14 mesh	TR-59980-04		TR-59981-04		TR-59984-04		TR-59985-04		TR-59940-04		TR-59941-04	
1.00	No. 18	16 mesh	TR-59980-05		TR-59981-05		TR-59984-05		TR-59985-05		TR-59940-05		TR-59941-05	
0.850	No. 20	20 mesh	TR-59980-06		TR-59981-06		TR-59984-06		TR-59985-06		TR-59940-06		TR-59941-06	
0.710	No. 25	24 mesh	TR-59980-07		TR-59981-07		TR-59984-07		TR-59985-07		TR-59940-07		TR-59941-07	
0.600	No. 30	28 mesh	TR-59980-08		TR-59981-08		TR-59984-08		TR-59985-08		TR-59940-08		TR-59941-08	
0.500	No. 35	32 mesh	TR-59980-09		TR-59981-09		TR-59984-09		TR-59985-09		TR-59940-09		TR-59941-09	
0.425	No. 40	35 mesh	TR-59980-10		TR-59981-10		TR-59984-10		TR-59985-10		TR-59940-10		TR-59941-10	
0.355	No. 45	42 mesh	TR-59980-11		TR-59981-11		TR-59984-11		TR-59985-11		TR-59940-11		TR-59941-11	
0.300	No. 50	48 mesh	TR-59980-12		TR-59981-12		TR-59984-12		TR-59985-12		TR-59940-12		TR-59941-12	
0.250	No. 60	60 mesh	TR-59980-13		TR-59981-13		TR-59984-13		TR-59985-13		TR-59940-13		TR-59941-13	
0.212	No. 70	65 mesh	TR-59980-14		TR-59981-14		TR-59984-14		TR-59985-14		TR-59940-14		TR-59941-14	
0.180	No. 80	80 mesh	TR-59980-15		TR-59981-15		TR-59984-15		TR-59985-15		TR-59940-15		TR-59941-15	
0.150	No. 100	100 mesh	TR-59980-16		TR-59981-16		TR-59984-16		TR-59985-16		TR-59940-16		TR-59941-16	
0.125	No. 120	115 mesh	TR-59980-17		TR-59981-17		TR-59984-17		TR-59985-17		TR-59940-17		TR-59941-17	
0.106	No. 140	150 mesh	TR-59980-18		TR-59981-18		TR-59984-18		TR-59985-18		TR-59940-18		TR-59941-18	
0.090	No. 170	170 mesh	TR-59980-19		TR-59981-19		TR-59984-19		TR-59985-19		TR-59940-19		TR-59941-19	
0.075	No. 200	200 mesh	TR-59980-20		TR-59981-20		TR-59984-20		TR-59985-20		TR-59940-20		TR-59941-20	
0.063	No. 230	250 mesh	TR-59980-21		TR-59981-21		TR-59984-21		TR-59985-21		TR-59940-21		TR-59941-21	
0.053	No. 270	270 mesh	TR-59980-22		TR-59981-22		TR-59984-22		TR-59985-22		TR-59940-22		TR-59941-22	
0.045	No. 325	325 mesh	TR-59980-23		TR-59981-23		TR-59984-23		TR-59985-23		TR-59940-23		TR-59941-23	
0.038	No. 400	400 mesh	TR-59980-24		TR-59981-24		TR-59984-24		TR-59985-24		TR-59940-24		TR-59941-24	

†Full height sieves measure 2" deep; half height sieves measure 1" deep.

Cole-Parmer™ One-Touch Vibratory Sieve Shaker

Don't waste time reprogramming

- Store up to 99 testing profiles for easy repeat of standard tests
- Touch-screen programmable controller allows selection of vibration level, time, and pauses

Combine proven separation technology with the latest in electronic control for fast, accurate separations. Establish the particle size for aggregates, ores, pharmaceuticals, powders, and more. Simply select vibration level, time, and pauses, and press "Start." Three-dimensional sieving action evenly distributes the sample across the sieving surface and reorients particles to ensure the maximum number of passing opportunities. Store up to 99 testing profiles for your standard sieving operations to ensure repeatability.

Shaker accepts eight full-height, or sixteen half-height 8"-dia sieves. Sieve clamps allow fast, easy insertion and removal of sieve stacks, while ensuring that sieves are tightly secured during testing.



Specifications

Test time: 0 to 99 minutes, 59 seconds

Pause time: 0 to 99 seconds
Power level: 1 to 10

Power (VAC, Hz)	Shpg wt lb (kg)	Catalog number	Price
115, 60	94 (43)	TR-59986-03	

Compact Ultrasonic Test Sieve Cleaner

Clean your 8" or 200-mm diameter sieves safely and effectively

Simply brush sieve before inserting it into the 1.4-gallon (5.3-L) ultrasonic bath—vibrations up to 37 kHz dislodge particles from sieve frame and screen. Select the run time from 1 to 5 minutes in 1-minute intervals or from 5 to 30 minutes in 5-minute intervals. Sieve cleaning program alternates between regular cleaning and a powerful pulse to produce excellent cleaning results. Degassing mode is ideal for degassing HPLC solvents while the sample prep mode is for standard mixing, cleaning, and dissolving applications.



Power	Catalog number	Price
115 VAC, 60 Hz	TR-59987-35	
230 VAC, 50 Hz	TR-59987-36	

[TR-59987-37](#) Lid, plastic

[TR-59987-38](#) Basket, SS

[TR-08801-11](#) Cleaning solution, 1-qt bottle

Cole-Parmer® Sieve Shaker and 3"-Diameter Sieves

Quiet, electromagnetic vibratory action for small samples

- 0 to 100% amplitude control for fine particle separation

This sieve shaker accommodates up to seven full-height 3"-diameter sieves and is ideal for small samples.

High-frequency, electromagnetic vibratory action with 0 to 100% amplitude control is ideal for fine particle separations. In-line solenoid-actuated tapping action may be used during vibration to speed dry separations. Also use the tap separately for tap-settling and bulk density tests.

Shaker also features on/off controls for vibration and a manual timed-mode switch. Digital timer shows time set and time remaining to enable reliable, repeatable results.

What's included: 6-ft power cord. Sieves sold separately below.



Specifications

Frequency: 60 taps/min

Vibratory frequency: 3600 vpm

Digital timer range:

1 sec to 99 min, 59 sec
(±0.03% repeat accuracy)

Description	Power (VAC, Hz)	Shpg wt lb (kg)	Catalog number	Price
Sieve shaker	115, 50/60	16 (7.3)	TR-59986-01	

Stainless Steel, 3"-Dia Full-Height Sieves (1" stacking height)

Sieve opening	US Standard	Catalog number	Price
4.00 mm	No. 5	TR-59987-01	
3.35 mm	No. 6	TR-59987-02	
2.80 mm	No. 7	TR-59987-03	
2.36 mm	No. 8	TR-59987-04	
2.00 mm	No. 10	TR-59987-05	
1.70 mm	No. 12	TR-59987-06	
1.40 mm	No. 14	TR-59987-07	
1.18 mm	No. 16	TR-59987-08	
1.00 mm	No. 18	TR-59987-09	
850 µm	No. 20	TR-59987-11	
710 µm	No. 25	TR-59987-12	
600 µm	No. 30	TR-59987-13	
500 µm	No. 35	TR-59987-14	
425 µm	No. 40	TR-59987-16	
355 µm	No. 45	TR-59987-17	
300 µm	No. 50	TR-59987-18	
250 µm	No. 60	TR-59987-19	
212 µm	No. 70	TR-59987-20	
180 µm	No. 80	TR-59987-21	
150 µm	No. 100	TR-59987-22	
125 µm	No. 120	TR-59987-23	
106 µm	No. 140	TR-59987-24	
90 µm	No. 170	TR-59987-25	
75 µm	No. 200	TR-59987-26	
63 µm	No. 230	TR-59987-27	
53 µm	No. 270	TR-59987-28	
45 µm	No. 325	TR-59987-29	
38 µm	No. 400	TR-59987-30	

[TR-59988-03](#) Stainless steel cover for 3"-diameter sieves

[TR-59988-07](#) Stainless steel, full-height receiving pan for 3"-diameter sieves



Cole-Parmer® UV/Visible Spectrophotometers

Save time—store and recall 200 test methods

- Leverage software for DNA/RNA/protein and kinetics analysis
- Be more productive with included four-position cuvette holder
- Responds precisely to transmittance changes for better results
- Optional Peltier temperature controller and/or sipper system for total utility
- Create standard curves and get wavelength scanning feature with optional software

What's included: a 7-ft (2.1-m) detachable cord, dust cover, two-position 10-mm cuvette holder, four glass cuvettes, and two quartz cuvettes.



Power (VAC, Hz)	115, 60	230, 50
Catalog number	TR-83059-10	TR-83059-15
Bandwidth	4 nm	
Wavelength range	200 to 1000 nm	
Wavelength accuracy	± 2 nm	
Photometric ranges	Transmittance	0 to 125% T
	Absorbance	-0.1 to 2.5 A
	Concentration	0 to 1999 C
Memory capability	Up to 200 standard curves	
Output	RS-232/USB	
Price		

TR-83057-65 Software, graphics. Standard curve, Abs./%T/Conc., Abs. vs time; for Windows® XP

TR-83057-66 Temperature control system; 115 VAC, 15 to 40°C. With external controller and Peltier 10 mm cell holder

TR-83057-68 Sipper system, 115 VAC. With external controller unit and peristaltic pump; requires flow cell and tubing

TR-83057-74 Sipper system, 230 VAC. With external controller unit and peristaltic pump; requires flow cell and tubing

TR-83057-70 Temperature control/sipper system, 115 VAC. Combines 83057-66 and 83057-68; requires flow cell and tubing

TR-83057-78 Flow cell, glass (visible spectra)

TR-83057-79 Flow cell, quartz (UV spectra)

TR-83057-64 Two-position long cuvette holder, 100 mm max

Cole-Parmer® Scanning UV/Visible Spectrophotometers

Analyze samples more accurately and reliably

- Program up to 30 methods, ideal for GLP verification protocols
- Get graphic display of sophisticated methods for DNA, protein, kinetics, and more
- Preprogrammed methods include DNA/protein ratios, or specify your own parameters with up to 10 wavelengths
- Position up to 8 cuvettes with pathlengths to 100 nm



These economical units allow you to study reaction kinetics up to 12 hours with sampling intervals down to 0.5 seconds; use post-run rescaling and curve/segment targeting to refine rate calculations. Scan speed is adjustable from 75 to 1000 nm/min. Use date/time stamping for documentation. Transfer data directly to printer using parallel port or interface with computer using RS-232 port.

Double-beamed models feature two detectors measuring sample and reference respectively and simultaneously for optimal accuracy.

What's included: manual 10-mm cell changer (standard 4-cell for single beam; 1-cell for double beam), four glass and two silica 10-mm cuvettes, dust cover, and power cord.



Beam type	Single		Double	
Catalog number	TR-83057-30	TR-83057-35	TR-83057-80	TR-83057-85
Bandwidth	4 nm		1.8 nm	
Wavelength range	190 to 1100 nm		190 to 1100 nm	
Wavelength accuracy	±0.8 nm		±0.3 nm	
Wavelength repeatability	±0.5 nm		±0.2 nm	
Photometric ranges	Transmittance	0 to 200% T		
	Absorbance	-0.3 to 3 A		
	Concentration	0 to 9999 C		
Input/output	USB/RS-232 and parallel port for printer			
Power (VAC, Hz)	115, 60	230, 50	115, 60	230, 50
Price				

Find even more online! Go to ColeParmer.com to search more than 100,000 products.

Thermo Scientific™ GENESYS™ 10S Scanning Spectrophotometers

Transfer data to PC or printer



- Faster results—powerful optics provide full-range scanning up to 4200 nm/min
- More flexibility—use included single- or six-cell cuvette holders for automatic or manual position selection
- Meet GLP requirements—units with printer document time, date, test, data, and results
- Don't lose control of sample temperature—optional Peltier temperature controller maintains your sample from 20 to 60°C

Visible Models feature single-beam optics with a single detector.

UV/Vis Scanning Models feature split-beam optics with dual detectors. Automatic cell correction compensates for differences between six cuvettes, reducing the need for expensive matched sets of cuvettes.

What's included: integrated six-position cell holder, single cell holder, USB memory device, USB cable, dust cover, and US power cord. Printer models also include one paper roll.



Type/model	Visible scanning wavelength		UV/visible scanning wavelength	
Catalog number	TR-02654-10	TR-02654-12	TR-02654-20	TR-02654-22
Beam type	Single beam		Dual beam—internal reference detector	
Bandwidth	5 nm		1.8 nm	
Wavelength range	325 to 1100 nm		190 to 1100 nm	
Wavelength accuracy	±1 nm		±1 nm	
Wavelength repeatability	±0.5 nm		±0.5 nm	
Photometric ranges	Transmittance	–0.3 to 125% T	–1.5 to 125% T	
	Absorbance	–0.1 to 3.0 A	–0.5 to 5.0 A	
	Concentration	±9999 C	±9999 C	
Power	Automatic selection; 100 to 240 VAC, 50/60 Hz			
Printer option	None	Built-in	None	Built-in
Price				

Accessories

- [TR-02652-81](#) VISIONlite 5 software
- [TR-02653-90](#) Peltier single-cell temperature controller, 20 to 60°C. 10-mm pathlength
- [TR-02653-91](#) Replacement printer paper. Pack of 5 rolls

Find even more online!
Go to ColeParmer.com to see full product details.

Jenway 67 Series Graphical Scanning Spectrophotometers

No more confusing buttons—simple touch-screen operation



- Easy transfer and saving of data with included software or via SD/USB memory cards
- No more lost data or programs—restrict access with multi-level secure log-in
- Ready to go—preprogrammed modes include photometrics, spectrum scanning kinetics, quantitation, and more
- Customize to your needs—optional sample holders are automatically recognized and parameters updated

What's included: 1GB SD/USB memory card, 100 disposable cuvettes, USB cable, and PC software on CD-ROM.



Type/model	Visible scanning wavelength	UV/visible scanning wavelength	
Catalog number	TR-83056-60	TR-83056-65	TR-83056-70
Beam type	Single beam	Dual beam	
Bandwidth	4 nm	1.5 nm	
Wavelength range	320 to 1100 nm	190 to 1100 nm	
Wavelength accuracy	±1 nm		
Wavelength repeatability	±0.2 nm	±0.1 nm	
Photometric ranges	Transmittance	0 to 199.9% T	
	Absorbance	–0.300 to 3.000 A	
	Concentration	±9999 C	
Power	Automatic selection; 100 to 240 VAC, 50/60 Hz		
Printer option	Built-in		
Price			

Accessories

- [TR-83056-80](#) Rectangular long-path cell holder, 10 to 100 mm
- [TR-83056-82](#) Micro-cuvette holder with reduced aperture
- [TR-83056-84](#) Automated eight-cell sample chamber, interchangeable with standard sample compartment; holds eight 10-mm square cuvettes
- [TR-83056-86](#) Sipper module sample chamber, interchangeable with standard sample compartment; feeds micro and standard flow cells
- [TR-83056-88](#) Peltier module sample chamber, interchangeable with standard sample compartment; control sample temperature from 20 to 50°C



Cole-Parmer® Hot Plates, Single- and Multiposition Stirrers, and Stirring Hot Plates

Get to work faster—reach max temperature in two minutes

- Stir bar doesn't dance—unique U-shaped magnet holds stir bar tightly
- Front-panel controls are positioned to prevent you from touching the hot plate
- Choose corrosion-resistant ceramic or more uniform aluminum top
- Stepless speed control provides smooth stirring action to 1500 rpm

Hot Plates have an epoxy-coated cast-aluminum body that is designed for durability and stability.

Single-Position Stirrers and Stirring Hot Plates have a large, permanent drive magnet, ensuring positive coupling of drive to stir bar. Permanently lubricated, brushless drive motor provides long, trouble-free operation.

Multiposition Stirrers and Stirring Hot Plates come with five or nine stirring positions, each individually controlled so you can perform different mixing applications simultaneously.

Mix multiple samples independently



230 VAC models

Specifications

Temperature stability: ±5°C of set temperature

No. of stirring positions	Volume per position	Top plate		Heating		Speed range	Power		Catalog number	Price
		Dimensions	Material	Temp range	Max load		VAC	Hz		
Hot plates										
—	—	6" x 6" (15.2 x 15.2 cm)	Aluminum	120 to 700°F (49 to 371°C)	10 lb (4.5 kg)	—	115	60	TR-04801-00	
							230	50	TR-04801-02	
—	—	6" x 6" (15.2 x 15.2 cm)	Ceramic	120 to 842°F (49 to 450°C)	10 lb (4.5 kg)	—	115	60	TR-04801-04	
							230	50	TR-04801-06	
—	—	12" x 12" (30.5 x 30.5 cm)	Aluminum	120 to 700°F (49 to 371°C)	25 lb (11.4 kg)	—	115	60	TR-04801-10	
							230	50	TR-04801-12	
—	—	12" x 12" (30.5 x 30.5 cm)	Ceramic	120 to 842°F (49 to 450°C)	25 lb (11.4 kg)	—	115	60	TR-04801-14	
							230	50	TR-04801-16	
Single-position stirrers										
1	2.5 L	6" x 6" (15.2 x 15.2 cm)	Aluminum	—	15 lb (6.8 kg)	100 to 1500 rpm	115	60	TR-04802-01	
							230	50	TR-04802-03	
	10 L	12" x 12" (30.5 x 30.5 cm)	Aluminum	—	25 lb (11.4 kg)	100 to 1500 rpm	115	60	TR-04802-11	
							230	50	TR-04802-13	
Single-position stirring hot plates										
1	2.5 L	6" x 6" (15.2 x 15.2 cm)	Aluminum	120 to 700°F (49 to 371°C)	15 lb (6.8 kg)	100 to 1500 rpm	115	60	TR-04803-01	
							230	50	TR-04803-03	
	2.5 L	6" x 6" (15.2 x 15.2 cm)	Ceramic	120 to 842°F (49 to 450°C)	15 lb (6.8 kg)	100 to 1500 rpm	115	60	TR-04803-05	
							230	50	TR-04803-07	
1	10 L	12" x 12" (30.5 x 30.5 cm)	Aluminum	120 to 700°F (49 to 371°C)	25 lb (11.4 kg)	100 to 1500 rpm	115	60	TR-04803-11	
							230	50	TR-04803-13	
	10 L	12" x 12" (30.5 x 30.5 cm)	Ceramic	120 to 752°F (49 to 400°C)	25 lb (11.4 kg)	100 to 1500 rpm	115	60	TR-04803-15	
							230	50	TR-04803-17	
Multiposition stirrers										
5	800 mL	12" x 12" (30.5 x 30.5 cm)	Ceramic	—	—	100 to 1500 rpm	120	60	TR-51450-21	
							230	50	TR-51450-26	
9	400 mL						120	60	TR-51450-23	
							230	50	TR-51450-28	
Multiposition stirring hot plates										
5	800 mL	12" x 12" (30.5 x 30.5 cm)	Ceramic	212 to 845°F (100 to 450°C)	40 lb (18.2 kg)	100 to 1500 rpm	120	60	TR-51450-71	
							230	50	TR-51450-76	
9	400 mL						120	60	TR-51450-73	
							230	50	TR-51450-78	

Cole-Parmer® Stir Bar Kits

- Chemically inert, low-friction, leakproof PTFE coating provides maximum energy transfer
- Available with or without spinning rings; rings reduce friction and noise

Bar type	With spinning ring	Without spinning ring
Catalog number	TR-04775-99	TR-04775-98
Length x diameter†	Two each of the following sizes: 1/2" x 3/16", 5/8" x 3/16", 1" x 3/8", 1 1/2" x 3/8", 2" x 3/8", 2 1/2" x 3/8"	Two each of the following sizes: 7/16" x 3/16", 1/2" x 3/16", 3/4" x 3/16", 1" x 3/8", 1 1/4" x 3/8", 1 1/2" x 3/8", 2" x 3/8", 2 1/2" x 1/2", 3" x 1/2"
Total/pk	12 stir bars	18 stir bars
Price/pk		

†Diameter given does not include the diameter of the spinning ring.



Equipment & Instrumentation

Stirrers & Hot Plates

Cole-Parmer® StableTemp™ Stirrers and Stirring Hot Plates

Get precise speed and temperature control across range

- Stay safe—hot surface warning until plate cools below 50°C
- Don't worry about spills—liquids diverted away from internal components for longer life
- Improved accuracy with LED display
- Corrosion-resistant ceramic top

Advanced Stirring Hot Plate

- More accurate results with separate heat and stirring displays
- Protect you and your sample with overtemperature protection
- Includes temperature probe, rod, and clamp

Models with aluminum top plate also available at ColeParmer.com



Top plate		Heating		Stirring		Power		Catalog number	Price
Dimensions	Material	Temp range	Max load	Speed range	Max capacity	VAC	Hz		
StableTemp stirrers									
4" x 4" (10.2 x 10.2 cm)	Ceramic	—	—	30 to 1200 rpm	1 L	120	50/60	TR-03406-00	
						230	50/60	TR-03406-05	
7" x 7" (17.8 x 17.8 cm)	Ceramic	—	—	30 to 1200 rpm	4 L	120	50/60	TR-03406-10	
						230	50/60	TR-03406-15	
10" x 10" (25.4 x 25.4 cm)	Ceramic	—	—	30 to 1200 rpm	6 L	120	50/60	TR-03406-30	
						230	50/60	TR-03406-35	
StableTemp stirring hot plates									
4" x 4" (10.2 x 10.2 cm)	Ceramic	86 to 1004°F (30 to 540°C)	15 lb (6.8 kg)	30 to 1200 rpm	1 L	120	50/60	TR-03407-00	
						230	50/60	TR-03407-05	
7" x 7" (17.8 x 17.8 cm)	Ceramic	86 to 1004°F (30 to 540°C)	25 lb (11.4 kg)	30 to 1200 rpm	4 L	120	50/60	TR-03407-10	
						230	50/60	TR-03407-15	
10" x 10" (25.4 x 25.4 cm)	Ceramic	86 to 752°F (30 to 400°C)	35 lb (15.9 kg)	30 to 1200 rpm	6 L	120	50/60	TR-03407-30	
						230	50/60	TR-03407-35	
StableTemp advanced stirring hot plate									
7" x 7" (17.8 x 17.8 cm)	Ceramic	86 to 1004°F (30 to 540°C)	25 lb (11.4 kg)	30 to 1200 rpm	4 L	120	50/60	TR-03407-40	
						230	50/60	TR-03407-45	

Velp® AREX Digital Round-Top Ceramic-Coated Stirring Hot Plates

Maintain constant speed even if viscosity changes

- Uniform heat distribution with aluminum alloy top
- Resists chemicals, scratches, and surface abrasions

AREX Digital Models include an external Pt 100 probe for direct temperature control to 482°F (250°C) with ±1.0°C accuracy, and a 6-ft (1.8-m) power cord with plug. **AREX Digital PRO Models** include a VTF digital thermoregulator with timer for direct temperature control to 572°F (300°C) with accuracy of ±0.5°C, and a 6-ft (1.8-m) power cord with plug.



Top plate		Temp range	Stirring		Power		Catalog number	Price
Dimensions	Materials		Speed range	Max capacity	VAC	Hz		
Digital stirring hot plate								
6.1" (15.5 cm) dia	Ceramic coated aluminum alloy	Ambient to 698°F (370°C)	0 to 1500 rpm	20 L	115	50/60	TR-86579-53	
					230		TR-86579-54	
Digital Pro stirring hot plate								
6.1" (15.5 cm) dia	Ceramic coated aluminum alloy	Ambient to 698°F (370°C)	0 to 1500 rpm	20 L	115	50/60	TR-86579-55	
					230		TR-86579-56	

[TR-17002-27](#) NIST-traceable calibration with data for stirrer and hot plate



NEW

Low-Profile Magnetic Stirrer

Continuous operation without the heat—ideal for heat-sensitive samples

- High chemical resistance with ABS plastic design
- Low-profile housing for limited-height locations



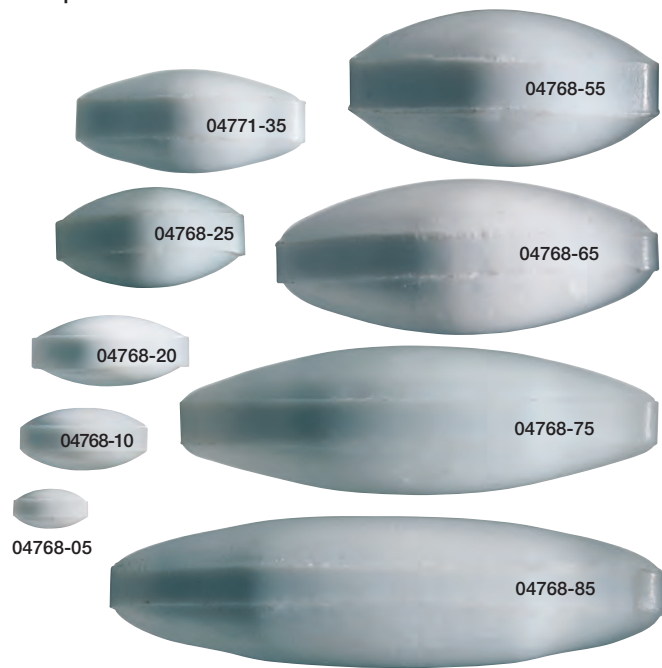
Speed range	Max stirring capacity	Power		Catalog number	Price
		VAC	Hz		
10 to 1100 rpm	5 L	120/240	50/60	TR-86579-10	



Egg-Shaped Stir Bars

Ensure complete mixing

- Egg-shaped stir bars have oval magnets—ideal for use in round-bottom flasks
- Shape conforms to flask bottom

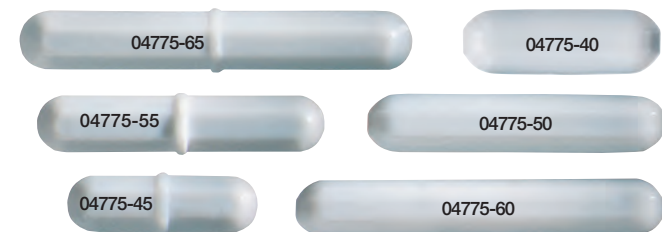


Length	Diameter	For flask sizes	Catalog number	Price
3/8" (9.5 mm)	3/16" (4.8 mm)	10 to 20 mL	TR-04768-05	
5/8" (15.9 mm)	1/4" (6.4 mm)	50 to 100 mL	TR-04768-10	
13/16" (20.6 mm)	3/8" (9.5 mm)	100 to 200 mL	TR-04768-20	
1" (25.4 mm)	1/2" (12.7 mm)	100 to 200 mL	TR-04768-25	
1 1/4" (31.8 mm)	5/8" (15.9 mm)	300 to 500 mL	TR-04771-35	
1 5/8" (41.3 mm)	3/4" (19.1 mm)	500 to 1000 mL	TR-04768-55	
2" (50.8 mm)	3/4" (19.1 mm)	2000 to 5000 mL	TR-04768-65	
2 1/2" (63.5 mm)	3/4" (19.1 mm)	2000 to 5000 mL	TR-04768-75	
3" (76.2 mm)	3/4" (19.1 mm)	5000 to 10000 mL	TR-04768-85	

Cole-Parmer® Slim-Line® Stir Bars

Get complete mixing

- Slimmer profile and larger length to diameter ratio
- Available with or without spinning rings



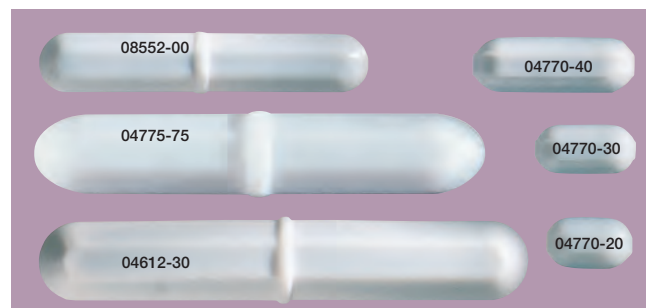
Size		With spinning ring		Without spinning ring	
Length	Diameter†	Cat. no.	Price	Cat. no.	Price
1" (25.4 mm)	5/16" (7.9 mm)	TR-04775-45		TR-04775-40	
1 1/2" (38.1 mm)		TR-04775-55		TR-04775-50	
2" (50.8 mm)		TR-04775-65		TR-04775-60	

†Diameter given does not include the diameter of the spinning ring.

Cole-Parmer® Mono-Mold® Stir Bars

Resist spin out at high speeds

- Super-strong alnico V magnets remain coupled to drive magnets even at high speeds
- Chemically inert, low-friction, leakproof PTFE coating provides smooth spinning and maximum energy transfer



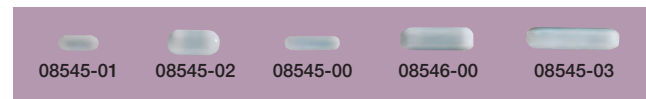
Size		With spinning ring		Without spinning ring	
Length	Diameter†	Cat. no.	Price	Cat. no.	Price
7/16" (11.1 mm)	3/16" (4.8 mm)	—		TR-04775-10	
1/2" (12.7 mm)	5/16" (7.9 mm)	TR-08548-00		TR-04770-20	
5/8" (15.9 mm)	5/16" (7.9 mm)	TR-08549-00		TR-04770-30	
1" (25.4 mm)	3/8" (9.5 mm)	TR-08550-00		TR-04770-40	
1 1/2" (38.1 mm)	3/8" (9.5 mm)	TR-08551-00		TR-04770-50	
2" (50.8 mm)	3/8" (9.5 mm)	TR-08552-00		TR-04770-60	
2 1/2" (63.5 mm)	3/8" (9.5 mm)	TR-04775-75		—	
2 1/2" (63.5 mm)	1/2" (12.7 mm)	—		TR-04770-70	
3" (76.2 mm)	1/2" (12.7 mm)	TR-04612-30		TR-04612-40	

†Diameter given does not include the diameter of the spinning ring.

Cole-Parmer® Micro Stir Bars

Mix in small-diameter vessels

- Strong alnico V magnets with one-piece coating of PTFE



Length x diameter	Catalog number	Qt/pk	Price/pk
5 x 2 mm	TR-08545-01		
6.35 x 3 mm	TR-08545-02	1	
7 x 2 mm	TR-08545-00		
10 x 3 mm	TR-08546-00	1	
12.7 x 3 mm	TR-08545-03		

Stir Bar Retrievers

Retrieve stir bars without messy spills or breakage. Alnico V magnet is completely enclosed. Model 08555-20 features a flexible shaft of PTFE for odd-shaped, and narrow-mouth containers.

08555-20

- [TR-08555-20](#) Stir bar retriever, flexible shaft; PTFE, 14 3/4" L (37.5 cm)
- [TR-08555-40](#) Stir bar retriever, polyethylene, 17" L (43.2 cm)



08555-40

Don't Get Burned—Gain More Confidence in Your Readings

- ✓ **Save time and money—** precalibrated to NIST-traceable standards before you receive it
- ✓ **Don't let** probe errors interfere with readings— electronic offset compensates for errors
- ✓ **Choose your readout—** measures in °F, °C, or Kelvin (K) with 0.1 resolution
- ✓ **Features for your convenience:**
 - Min/Max/Avg
 - Hold
 - Relative time stamp
 - Auto-off to save battery life
- ✓ Measure from a distance with optional infrared wand on Professional series

Precalibration provided by

INNOCAL®

Precalibration | Recalibration | Onsite

866-InnoCal (866-466-6225)
InnoCalSolutions.com

Digi-Sense® Precalibrated Thermocouple Thermometers

- Compact, affordable units provide accurate and dependable readings
- No need to worry about reading measurements— large, backlit LCD makes readings easy
- Choose the model that's right for you

General-Purpose Thermocouple Thermometers

Meters accept both type K or J thermocouple probes with miniconnector. The two- and four-channel models provide data logging of up to 18,000 readings; USB interface lets you easily download data to a PC for analysis with included software.

Professional Thermocouple Thermometers with IR Input

These durable meters deliver accurate readings in an ergonomic design. Models accept type K probes and an optional infrared (IR) wand for non-contact measurements from a distance. Two- and four-channel models continually scan each channel for real-time measurements. Data logging models allow you to download and analyze data fully.

What's included: type K bead wire temperature probe (one for each input), batteries, and NIST-traceable calibration report with data supplied by InnoCal. Data logging models also include USB cable and software.



NEW

20250-01

20250-17



Description	General-purpose thermometers			Professional thermometers with IR input			
	TR-20250-01	TR-20250-02	TR-20250-03	TR-20250-18	TR-20250-17	TR-20250-19	TR-20250-20
Catalog number	1 (type K or J)	2 (type K or J)	4 (type K or J)	1 (type K)	2 (type K)	2 (type K)	4 (type K)
Thermocouple (T/C) inputs	1 (type K or J)	2 (type K or J)	4 (type K or J)	1 (type K)	2 (type K)	2 (type K)	4 (type K)
Infrared (IR) input	No			Yes, with optional IR wand 20250-24 (order below)			
T/C range	K: -328 to 2501°F (-200 to 1372°C) J: -346 to 2012°F (-210 to 1100°C)			K: -328 to 2501°F (-200 to 1372°C)			
IR range	—			-31 to 1022°F (-35 to 550°C)			
Resolution	0.1°F/C below 1000°, 1°F/C above 1000°			0.1°F/C below 1000°, 1°F/C above 1000°			
T/C accuracy	Above -148°F (-100°C): ±[0.5% rdg + 1.8°F (1°C)] Below -148°F (-100°C): ±[0.5% rdg + 3.6°F (2°C)] Differentials: ±[0.5% rdg + 3.6°F (2°C)]			Above -148°F (-100°C): ±[0.15% rdg + 1.8°F (1°C)] Below -148°F (-100°C): ±[0.5% rdg + 3.6°F (2°C)] Differentials: ±[0.5% rdg + 1.8°F (1°C)]			
IR accuracy	—			Above 14°F (-10°C): ±[2.0% rdg + 3.6°F (2°C)]; Below 14°F (-10°C): ±9°F (5°C); T/C-IR differentials: ±[2.0% rdg + 5.4°F (3°C)] above 14°F (-10°C); ±11°F (6°C) below 14°F (-10°C)			
Data logging	No	18,000 points		No	No	18,000 points	10,000 points
USB interface	No	Yes		No	Yes		
Temp differential	No	Yes		Yes			
Scan function	No			No	Yes		
Dimensions	6½" x 2½" x 1½" (16.5 x 6.4 x 2.9 cm)			8" x 3" x 2" (20.1 x 7.5 x 5 cm)			
Price							



Optional IR wand
20250-24

Accessories

- TR-20250-24** Optional infrared wand for Professional thermocouple thermometers only. Features 8:1 distance-to-spot ratio. Measures 6½" x 2" x 1½" (16.4 x 5 x 4 cm). Includes one 9 V battery
- TR-09376-00** Replacement batteries, AAA. Pack of 12
- TR-09376-04** Replacement batteries, 9 V. Pack of 4

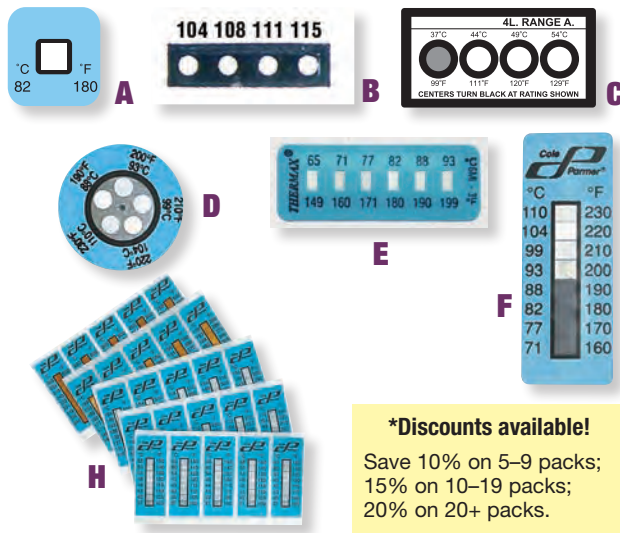


Irreversible High-Temperature Labels

Save time and money due to costly recalls

- Used as a quick inspection tool that the product is in usable condition during the shipping and receiving process
- Self-adhesive design

Labels are made up of a series of temperature-sensitive elements sealed between heat-resistant substrates with transparent windows. Each element changes color distinctly as its rated temperature is met or exceeded. The changes to the label are irreversible, providing a temperature history of the surface being monitored. The labels will not delaminate when removed, allowing them to be attached to an inspection report to serve as a permanent record. Ideal for use in the food, automotive, molding and metal working industries. Accuracy is $\pm 1^{\circ}\text{C}$ from 29 to 99°C , $\pm 1.5^{\circ}\text{C}$ from 100 to 154°C , and $\pm 1\% + 1^{\circ}\text{C}$ from 160 to 280°C . Shelf life: one year after date of purchase.



***Discounts available!**
 Save 10% on 5–9 packs;
 15% on 10–19 packs;
 20% on 20+ packs.

A. One-Temperature Point—Square Labels

Temperature point		Dimensions (W x H)		Catalog number	Price/ pk of 50*
$^{\circ}\text{F}$	$^{\circ}\text{C}$	in.	mm		
84	29	1/2 x 1/2	13 x 13	TR-08068-31†	
93	34			TR-08068-32†	
99	37			TR-08068-33†	
104	40	1/2 x 1/2	13 x 13	TR-08068-34†	
108	42			TR-08068-35†	
111	44	1/2 x 1/2	13 x 13	TR-08068-36†	
115	46			TR-90309-00†	
140	60	1/2 x 1/2	13 x 13	TR-90309-05	
160	71			TR-90309-10	
171	77	1/2 x 1/2	13 x 13	TR-90309-15	
180	82			TR-90309-20	
190	88	1/2 x 1/2	13 x 13	TR-90309-25	
210	99			TR-90309-30	
230	110	1/2 x 1/2	13 x 13	TR-90309-35	
250	121			TR-90309-40	
261	127	1/2 x 1/2	13 x 13	TR-90309-45	
320	160			TR-90309-50	

B. Four-Temperature Points—Micro Horizontal Labels

Temperature points	Dimensions (W x H)		Catalog number	Price/ pk of 10*
	in.	mm		
104, 108, 111, 115 $^{\circ}\text{F}$	1/6 x 1/2	4 x 13	TR-08068-41†	
120, 129, 140, 149 $^{\circ}\text{F}$			TR-08068-42†	
160, 171, 180, 190 $^{\circ}\text{F}$	1/6 x 1/2	4 x 13	TR-08068-43	
199, 210, 219, 230 $^{\circ}\text{F}$			TR-08068-44	
241, 250, 261, 270 $^{\circ}\text{F}$			TR-08068-45	
280, 289, 300, 309 $^{\circ}\text{F}$	1/6 x 1/2	4 x 13	TR-08068-46	
320, 331, 340, 351 $^{\circ}\text{F}$			TR-08068-47	

C. Four-Temperature Points—Horizontal Labels

Temperature points		Dimensions (W x H)		Catalog number	Price/ pk of 10*
$^{\circ}\text{F}$	$^{\circ}\text{C}$	in.	mm		
99, 111, 120, 129	37, 44, 49, 54	7/8 x 1 3/4	22 x 44	TR-90308-40†	
140, 149, 160, 171	60, 65, 71, 77			TR-90308-45	
180, 190, 199, 210	82, 88, 93, 99	7/8 x 1 3/4	22 x 44	TR-90308-50	
219, 230, 241, 250	104, 110, 116, 121			TR-90308-55	
261, 270, 280, 289	127, 132, 138, 143	7/8 x 1 3/4	22 x 44	TR-90308-60	
300, 309, 320, 331	149, 154, 160, 166			TR-90308-65	
340, 351, 361, 370	171, 177, 182, 188	7/8 x 1 3/4	22 x 44	TR-90308-70	
379, 390, 399, 410	193, 199, 204, 210			TR-90308-75	

D. Five-Temperature Points—Round Labels

Temperature points		Dimension (dia)		Catalog number	Price/ pk of 25*
$^{\circ}\text{F}$	$^{\circ}\text{C}$	in.	mm		
105, 110, 115, 120, 130	40, 43, 46, 49, 54	5/8	16	TR-90303-20†	
140, 150, 160, 170, 180	60, 65, 71, 77, 82			TR-90303-22	
190, 200, 210, 220, 230	88, 93, 99, 104, 110			TR-90303-24	
240, 250, 260, 270, 280	116, 121, 127, 132, 138			TR-90303-26	
290, 300, 310, 320, 330	143, 149, 154, 160, 166	5/8	16	TR-90303-28	
340, 350, 360, 370, 380	171, 177, 182, 188, 193			TR-90303-30	
390, 399, 410, 421, 435	199, 204, 210, 216, 224	5/8	16	TR-08068-21	
450, 466, 480, 489, 500	232, 241, 249, 254, 260			TR-08068-23	

E. Six-Temperature Points—Horizontal Labels

Temperature points		Dimensions (W x H)		Catalog number	Price/ pk of 10*
$^{\circ}\text{F}$	$^{\circ}\text{C}$	in.	mm		
84, 91, 93, 99, 104, 108	29, 33, 34, 37, 40, 42	1/2 x 1 1/4	13 x 32	TR-90308-91†	
111, 115, 120, 129, 140, 144	44, 46, 49, 54, 60, 62	1/2 x 1 1/4	13 x 32	TR-90308-92†	
149, 160, 171, 180, 190, 199	65, 71, 77, 82, 88, 93	1/2 x 1 1/4	13 x 32	TR-90308-93	
210, 219, 230, 241, 250, 261	99, 104, 110, 116, 121, 127	1/2 x 1 1/4	13 x 32	TR-90308-94	
270, 280, 289, 300, 309, 320	132, 138, 143, 149, 154, 160	1/2 x 1 1/4	13 x 32	TR-90308-95	
331, 340, 351, 360, 370, 379	166, 171, 177, 182, 188, 193	1/2 x 1 1/4	13 x 32	TR-90308-96	
390, 399, 410, 421, 435, 450	199, 204, 210, 216, 224, 232	1/2 x 1 1/4	13 x 32	TR-90308-97	
460, 480, 489, 500, 536, 554	240, 249, 254, 260, 280, 290	1/2 x 1 1/4	13 x 32	TR-90308-98	

F–H. Eight- and Nine-Temperature Points—Vertical Labels

Temperature points		Dimensions (W x H)		Catalog number	Price/ pk of 25*
$^{\circ}\text{F}$	$^{\circ}\text{C}$	in.	mm		
F. Eight-point					
100, 105, 110, 115, 120, 130, 140, 150 $^{\circ}\text{F}$ (37, 40, 43, 46, 49, 54, 60, 65 $^{\circ}\text{C}$)		3/4 x 2	19 x 51	TR-08068-20†	
160, 170, 180, 190, 200, 210, 220, 230 $^{\circ}\text{F}$ (71, 77, 82, 88, 93, 99, 104, 110 $^{\circ}\text{C}$)		3/4 x 2	19 x 51	TR-08068-22	
240, 250, 260, 270, 280, 290, 300, 310 $^{\circ}\text{F}$ (116, 121, 127, 132, 138, 143, 149, 154 $^{\circ}\text{C}$)		3/4 x 2	19 x 51	TR-08068-24	
320, 330, 340, 350, 360, 370, 380, 390 $^{\circ}\text{F}$ (160, 166, 171, 177, 182, 188, 193, 199 $^{\circ}\text{C}$)		3/4 x 2	19 x 51	TR-08068-26	
G. Nine-point (not shown)					
400, 410, 420, 435, 450, 465, 480, 490, 500 $^{\circ}\text{F}$ (204, 210, 216, 224, 232, 240, 249, 254, 260 $^{\circ}\text{C}$)		3/4 x 2	19 x 51	TR-08068-28	
H. Eight- and nine-point label kit					
Contains five labels of each of the five types of indicators shown in the table above				TR-08068-90†	

†Note: Express shipping by air is required to prevent activation while in transit.

Equipment & Instrumentation

Temperature

Digi-Sense® Blue Spirit Certified Glass Thermometers

Be more accurate with your readings

- Nonmercury blue spirit liquid and white background for easy reading
- NIST-traceable, laminated report of calibration included

Thermometers are individually calibrated to NIST standards at specific temperatures and come with a NIST-traceable calibration report supplied by the manufacturer stating corrections to one-tenth the smallest division.



Temperature range	Scale divisions	Accuracy	Length	Calibration points	Partial immersion			Total immersion	
					Catalog number	Immersion depth	Price	Catalog number	Price
Celsius-scale thermometers									
-100 to 50°C	1°	2°, 3° below 50°C	300 mm	-78, -20, 0, 4, 37°C	TR-00708-00	76 mm		—	
-20 to 110°C	1°	±1.5°C	300 mm	0, 50, 100°C	TR-00708-01	76 mm		TR-00708-05	
-20 to 110°C	1°	±1.5°C	300 mm	0, 37, 56°C	TR-90300-11	76 mm		—	
-20 to 150°C	1°	±1.5°; 2° above 105°C	300 mm	0, 60, 120°C	TR-00708-02	76 mm		TR-00708-06	
-10 to 70°C	0.5°	±1°C	300 mm	0, 37, 56°C	TR-00708-03	76 mm		—	
-1 to 51°C	0.1°	±1°C	460 mm	0, 10, 20, 30, 37, 40, 50°C	TR-90300-13	76 mm		TR-90300-22	
-1 to 61°C	0.1	±1°C	420 mm	0, 37, 56°C	TR-00708-04	76 mm		—	
-10 to 225°C	1°	±1°C	300 mm	1, 100, 200°C	—	—		TR-00708-07	
-1 to 101°C	0.1°	±1°C	610 mm	0, 50, 100°C	—	—		TR-00708-08	
-1 to 101°C	0.1°	±1°C	610 mm	0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100°C	TR-90300-15	76 mm		TR-90300-21	
-1 to 201°C	0.2°	0.7°, 1° above 100°C	610 mm	0, 25, 37, 44.6, 100, 121, 140, 150, 160, 200°C	—	—		TR-90300-23	
-1 to 201°C	0.2°	1°, 1.5° above 100°C	610 mm	0, 20, 37, 56, 80, 100, 121, 150°C	TR-90300-19	76 mm		—	
Fahrenheit-scale thermometers									
30 to 124°F	0.2°	±2°F	460 mm	32, 40, 60, 100, 120°F	TR-90300-17	76 mm		—	
0 to 300°F	2°	±3°; 4° above 220°F	300 mm	32, 100, 200, 300°F	TR-90300-20	76 mm		—	

Equipment & Instrumentation

Temperature

H-B Instrument Easy-Read® Enviro-Safe® Certified Nonhazardous Glass Thermometers

Maximize your accuracy—individually calibrated

- Replace mercury thermometers with the same accuracy without any hazards
- 100% nontoxic, nonhazardous, biodegradable, and “green”—liquid easily cleans with soap and water
- NIST-traceable detailed, laminated Report of Calibration

Each thermometer features a black liquid and yellow back glass which creates a distinct contrast that is easy to read. Thermometers come complete with ring top anti-roll fitting, individual serial number and NIST-traceable calibration report supplied by the manufacturer.



Temperature range	Scale divisions	Accuracy	Length	Calibration points	Partial immersion			Total immersion	
					Catalog number	Immersion depth	Price	Catalog number	Price
Celsius-scale thermometers									
-10 to 70°C	0.5°	0.5°	300 mm	0, 37, 56°C	TR-08008-47	76 mm		—	
-20 to 110°C	1°	1°	300 mm	0, 50, 100°C	TR-08008-48	76 mm		TR-08008-49	
-20 to 110°C	1°	1°	300 mm	0, 37, 56°C	TR-08008-52	76 mm		TR-08008-53	
-20 to 110°C	1°	1°	300 mm	0, 4, 20, 37, 44.5, 103°C	TR-90300-31	76 mm		—	
-20 to 150°C	1°	1°	300 mm	0, 60, 120°C	TR-08008-50	76 mm		TR-08008-51	
-10 to 225°C	1°	1°	350 mm	1, 100, 200°C	—	—		TR-08008-54	

Wait!

There's More at ColeParmer.com

Browse 100,000+ products plus find **Technical Resources** to help you choose

Digi-Sense® General-Purpose and Refrigerator/Freezer Thermometers

Get multiple readings simultaneously

- Simultaneously view high, low, and current temperature
- Keep samples safe—programmable alarm alerts when temperature deviates from set point
- Monitor conditions—Min/Max feature stores the highest and lowest readings until cleared
- Get more done—monitor multiple applications with dual-probe units
- Versatile units are mountable on wall or benchtop

NEW



D



A



Standard Refrigerator/Freezer Thermometers

provide accurate readings even when door is opened, as temperature sensor is enclosed within a glycol-filled bottle.

Advanced Thermometers feature high accuracy, one-button field calibration, and date/time stamp. Unit displays the exact time and date when thermometer alarms are triggered. RTD thermometers provide greater accuracy and a unique Min/Max feature that displays temperatures for previous 24 hours (each hour) or previous 31 days (for each day).

Data Logging Thermometers record up to 525,600 data points to be transferred to a computer using a USB flash drive. The alarm tracking feature stores up to 10 unique alarm events. "Memory lock" option does not allow the internal memory to be cleared, and logging capacity increases to 1 million data points.

What's included: one AA battery and NIST-traceable calibration report supplied by manufacturer.



E

CE

Application	Sensor type	Range	Resolution	Accuracy	Power	Catalog number	Price
A. Standard thermistor models							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	1°	±1°C	One AA battery (included)	TR-94460-72	
Refrigerator/freezer	One 5-mL bottle probe					TR-94460-71	
General purpose	One wire probe					TR-94460-70	
B. Advanced thermistor models with improved accuracy (not shown)							
Refrigerator/freezer	Two bottle probes	-58 to 158°F (-50 to 70°C)	0.01°	±0.30°C	One AA battery (included)	TR-94460-92	
General purpose	Two wire probes					TR-94460-91	
General purpose	One solid SS probe					TR-94460-98	
General purpose	Two solid SS probe					TR-94460-99	
C. Advanced thermistor models with improved accuracy and data logging (not shown)							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	0.01°	±0.25°C	One AA battery (included)	TR-94460-07	
Refrigerator/freezer	Two bottle probes					TR-94460-09	
General purpose	One wire probe					TR-94460-11	
General purpose	Two wire probes					TR-94460-14	
General purpose and refrigerator/freezer	One wire and one bottle probe					TR-94460-18	
General purpose	One solid SS probe					TR-94460-16	
General purpose	Two solid SS probes					TR-94460-17	
D. Advanced thermistor models with improved accuracy and "memory lock" data logging							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	0.01°	±0.25°C	One AA battery (included)	TR-94460-37	
Refrigerator/freezer	Two bottle probes					TR-94460-39	
General purpose	One wire probe					TR-94460-41	
General purpose	Two wire probes					TR-94460-43	
General purpose and refrigerator/freezer	One wire and one bottle probe					TR-94460-47	
General purpose	One solid SS probe					TR-94460-44	
General purpose	Two solid SS probes					TR-94460-46	
E. Advanced RTD high-accuracy models							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	0.01°	±0.1°C	One AA battery (included)	TR-37803-88	
General purpose	One wire probe					TR-37804-03	
General purpose	One wire probe	-148 to 158°F (-100 to 70°C)				TR-37804-05	
General purpose	One solid SS probe	-148 to 199.99°F (-100 to 199.99°C)				TR-37804-04	

Equipment & Instrumentation

Temperature

Temperature/Humidity Paperless Recorder

No need for calibration

- Detachable probe extends up to 1 meter and needs no calibration
- Records up to 49,000 data points including temperature and humidity, while calculating dew point
- Know when values are out of range with audible and visual alarms
- Read more data easily including temperature, relative humidity, time and date
- No more unauthorized changes with lockout security feature



Specifications

Parameter	Temperature	Humidity
Range	-20.0 to 140.0°F (-28 to 60°C)	10.0 to 95.0% RH
Resolution	0.1°F (0.1°C)	1% RH
Accuracy	±1.8°F (1°C)	±3% RH

Description	Power	Catalog number	Price
Temperature/humidity paperless recorder	110 VAC adapter or three AA batteries	TR-23029-81	

Accessories

- [TR-23029-82](#) Replacement temperature/humidity probe
- [TR-09376-01](#) Replacement batteries, AA. Pack of 4
- [TR-17030-20](#) NIST-traceable calibration with data for humidity/temperature recorders

Extech® Dual Laser Infrared Thermometers

Get easier targeting with dual lasers

- Increase measurement accuracy for different surfaces with adjustable emissivity
- Adjustable High/Low set points with audible alarm alerts user when temperature exceeds the programmed set points
- Lock function for continuous readings
- Model 42509 also features a blue backlit dual LCD that changes to red when reading exceeds high or low set points



Model number	42512	42511	42509
Catalog number	TR-90440-64	TR-90440-69	TR-90440-84
Distance-to-target ratio	30:1	12:1	12:1
Range	-58 to 1832°F (-50 to 1000°C)	-58 to 1100°F (-50 to 500°C)	-4 to 950°F (-20 to 510°C)
Resolution	0.1°F/°C	0.1°F/°C	0.1°F/°C
Accuracy	2%	2%	2%
Response time	150 ms	150 ms	150 ms
Emissivity	0.10 to 1.00 Adjustable	0.10 to 1.00 Adjustable	0.10 to 1.00 Adjustable
Power	One 9 V battery		
Price			

Accessories

- [TR-09376-04](#) Replacement batteries, 9 V. Pack of 4
- [TR-17004-00](#) NIST-traceable calibration report with data for infrared thermometers

Extech® EasyView® Thermocouple Thermometers

No more squinting to read data

- Large display makes reading measurements easy

Model 95001-05 is a single-input type K thermometer which features store/recall of 150 readings, Avg, relative functions, Min/Max, Hold, °F/°C selectable units, and auto power off.

Model 95001-06 is a dual-input type K thermometer which offers the same features as 95001-05; plus an offset function for relative measurement, temperature differential between two probes (T1-T2), timer, elapsed time, time of reading, min/max, backlit display, and °F/°C/K selectable units.

Model 95001-07 is a dual-input thermometer with datalogger which offers the same features as 95001-06. This meter also includes a datalogger that can store up to 8800 data points and download via bidirectional RS-232 interface.

What's included: type K thermocouple probe (one for each input). Model 95001-07 also includes two type K probes, RS-232 cable, and software.



Probe	Data logger	Range	Resolution	Accuracy	Power	Catalog number	Price
Single input, type K	No	-58 to 1999°F (-50 to 1300°C)	0.1°F/°C below 200°, 1°F/°C above 200°	±0.3% of reading, +2°F (+1°C)	Six AAA batteries (included)	TR-95001-05	
Dual input, type K	No	-200 to 1999°F (-200 to 1360°C)	0.1°F/°C below 200°, 1°F/°C above 200°	±0.3% of reading, +2°F (+1°C)		TR-95001-06	
Dual input; types J, K, T, E, R, S, N	Yes	-200 to 1994°F (-200 to 1090°C)	0.1°F/°C below 200°, 1°F/°C above 200°	±0.05% of reading, ±1.5°F (0.75°C)		TR-95001-07	



Cole-Parmer® General-Purpose Timers



Jumbo-Digit Dual-Channel Clock/Timer

See time easily—tilts for better viewing

- Large, 3"W x 2½"H LCD
- Use both channels for simultaneous countdown, or time of day with count up timer
- Choose 12- or 14-hour display format
- Alarm sounds at end of cycle and shows elapsed time



What's included: wall-mounting bracket and one AAA battery.



Number of channels	Timing capacity	Catalog number	Price
Two	24 hr	TR-94440-10	

100-Hour, Triple-Display Clock/Timer

Know which channel is done with unique tones

- Use as digital clock, timer, or stopwatch
- Easily recall previous time set via memory
- Alarm condition indicated by flashing LCD



What's included: NIST-traceable calibration report supplied by the manufacturer and one AAA battery.

Number of channels	Timing capacity	Catalog number	Price
Three	99 hr, 59 min, 59 sec	TR-94411-10	

Triple-Display Clock/Timer

Get timing faster—recall all channels' settings instantly

- Use as a countdown timer, count up stopwatch, or clock
- Count up to 24 hours, count down to 20 hours
- Displays time elapsed since alarm



What's included: magnetic clip and one AAA battery.

Number of channels	Timing capacity	Catalog number	Price
Three	24 hr up/20 hr down	TR-94440-00	

Flashing LED Big-Digit Timer

Never wonder about remaining time again

- Easily view 1"H display across the room
- LED flashes green for last 10 seconds of timer, flashes red when alarm sounds
- Don't annoy others—adjust alarm volume to high, low, or off
- Store three countdown times for easy recall



What's included: magnetic back, flip-open easel stand, spring fastener for clipping, an opening for a lanyard, two AAA batteries, and NIST-traceable calibration report supplied by the manufacturer.

Number of channels	Timing capacity	Catalog number	Price
One	100 min	TR-94461-15	

Giant-Digit Timer

Largest display for easiest viewing

- 1⅞"H LCD for easy viewing from across the room
- Automatic Bounceback™ memory easily recalls repetitive timing operation
- Displays time elapsed since alarm



What's included: built-in stand, magnet, clip, one AAA battery, and NIST-traceable calibration report supplied by the manufacturer.



Number of channels	Timing capacity	Catalog number	Price
One	100 min	TR-94461-01	

Four-Channel, Large-Display Clock/Timer

Easy monitoring of four experiments simultaneously

- Channels feature distinct alarms that sound for one minute
- Set up to 100 hours in count up or countdown modes
- Time of day in 12- or 24-hour format



What's included: magnetic clip, stand, and button cell battery.



Number of channels	Timing capacity	Catalog number	Price
Four	100 hr	TR-08649-10	

Cole-Parmer® Ultrasonic Cleaners

Quicker cleaning and degassing of samples

- High-frequency sound waves provide greater cleaning and reliability
- Gentle cleaning with 40 kHz sound waves won't damage delicate items
- Durable, leakproof design for worry-free cleaning

Basic Ultrasonic Cleaners

- Set timer and don't worry—control cleaning cycles up to 60 minutes
- Get better cleaning with optional heater models—heat to 156°F (69°C) with overtemperature protection

Advanced Ultrasonic Cleaners

- Easily control your precise applications—feature digital timer, power tracking, sleep, and degas mode
- Worry-free processes—set timer for up to 90 minutes, unit automatically compensates for heavier loads
- Get deeper cleaning with optional heater option



08895-43



Capacity gal. (L)	Tank dimensions (L x W x H)	Power (50/60 Hz)	Basic cleaner with mechanical timer			Basic cleaner with mechanical timer and heater			Advanced cleaner with digital timer, power tracking, and degas			Advanced cleaner with digital timer, power tracking, high/low power, degas and heater		
			Amps	Cat. no.	Price	Amps	Cat. no.	Price	Amps	Cat. no.	Price	Amps	Cat. no.	Price
1/2 (1.9) [†]	6" x 5 1/2" x 4" (15.2 x 14 x 10.2 cm)	115 VAC	0.8	TR-08895-21		1.2	TR-08895-23		0.8	TR-08895-25		1.3	TR-08895-27	
		230 VAC	0.4	TR-08895-29		0.7	TR-08895-31		0.4	TR-08895-33		0.7	TR-08895-35	
3/4 (2.8) [†]	9 1/2" x 5 1/2" x 4" (24.1 x 14 x 10.2 cm)	115 VAC	1.1	TR-08895-37		2	TR-08895-39		1.1	TR-08895-41		2	TR-08895-43	
		230 VAC	0.6	TR-08895-45		1.1	TR-08895-47		0.6	TR-08895-49		1.1	TR-08895-51	
1 1/2 (5.7) [‡]	11 1/2" x 6" x 6" (29.2 x 15.2 x 15.2 cm)	115 VAC	1.1	TR-08895-53		2.9	TR-08895-55		1.1	TR-08895-57		2.9	TR-08895-59	
		230 VAC	0.6	TR-08895-61		1.5	TR-08895-63		0.6	TR-08895-65		1.6	TR-08895-67	
2 1/2 (9.5) [‡]	11 1/2" x 9 1/2" x 6" (29.2 x 24.1 x 15.2 cm)	115 VAC	1.5	TR-08895-69		4	TR-08895-71		1.5	TR-08895-73		4.1	TR-08895-75	
		230 VAC	0.8	TR-08895-77		2.1	TR-08895-79		0.8	TR-08895-81		2.1	TR-08895-83	
5 1/2 (20.8) [‡]	19 1/2" x 11" x 6" (49.5 x 27.9 x 15.2 cm)	115 VAC	2.7	TR-08895-85		7.7	TR-08895-87		2.7	TR-08895-89		7.8	TR-08895-91	
		230 VAC	1.4	TR-08895-93		4	TR-08895-95		1.4	TR-08895-97		4	TR-08895-99	

[†]The 1/2- and 3/4-gallon cleaners have a pour spout. [‡]The 1 1/2-, 2 1/2-, and 5 1/2-gallon cleaners have a built-in pour drain.

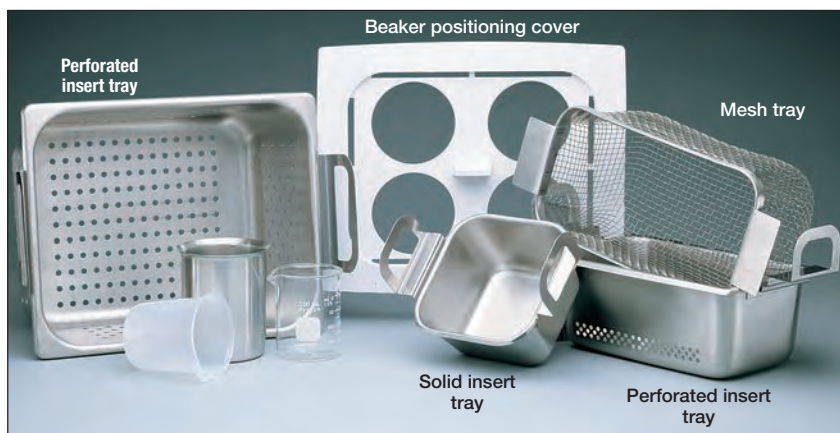
Accessories for Ultrasonic Cleaners

Achieve optimal cleaning results!

Ultrasonic activity is greatest about an inch from the bottom of the tank, so suspending your items provides the best cleaning possible and helps prevent damage to the transducers.

Insert Trays are constructed of 304 stainless steel. Use the solid trays to support items that require indirect cleaning. Use perforated or mesh trays to support items in the tank for direct cleaning.

Beaker Positioning Covers are ideal for cleaning small objects or for indirect cleaning. Covers come with a beaker suspension ring.



Compatible ultrasonic cleaners	Solid insert trays		Perforated insert trays		Mesh insert trays		Beaker positioning covers			
	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Beakers held	Material	Cat. no.	Price
08895-21 to -35 series	TR-08850-41		TR-08850-42		TR-08850-45		One 600 mL	Polypropylene	TR-08890-50	
08895-37 to -51 series	TR-08851-41		TR-08851-42		TR-08851-45		Two 600 mL	Polypropylene	TR-08891-50	
08895-53 to -67 series	TR-08852-41		TR-08852-42		TR-08852-45		Three 250 mL	Polypropylene	TR-08892-50	
08895-69 to -83 series	TR-08853-41		TR-08853-42		—	—	Four 600 mL	Polypropylene	TR-08893-50	
08895-85 to -99 series	TR-08854-41		TR-08854-42		—	—	Six 600 mL	304 stainless steel	TR-08894-50	

Equipment & Instrumentation

Ultrasonic Cleaners

Cole-Parmer® Rotational Viscometers

Included 316 stainless steel spindles are ideal for food applications!

- Select from 10 language options
- Ensure accurate readings by calibrating your viscometer to a known standard

Determine the dynamic viscosity of samples in applications such as food (sauces, juices, and syrups), adhesives, petroleum products, biofuels, paints, pharmaceuticals, chemicals, and more! Over/under range alarm sounds when your sample is too high/low for the spindle selected. All models feature 10 language options (English, French, German, Italian, Japanese, Spanish, Portuguese, Dutch, Polish, and Catalan), push-button control with easy-to-use menu system, motor self-test, user calibration to a known standard, and universal power supply.

Basic Viscometers are an economical choice for fast, accurate viscosity readings. Feature a 4-line display that shows selected speed, selected spindle, viscosity, and % of full scale.

Basic Viscometers with USB Output include software to download data through the USB output to your PC for analysis. Store up to 10 user programs for repeated tests. Display selected speed, selected spindle, viscosity, % torque, shear rate, and shear stress on the 5-line display. Enter the sample density, and the unit calculates and displays kinematic viscosity (cSt) as well.

Advanced Viscometers with Temperature Probe have three times the speed selections and double the speed range of the basic models. Monitor and display temperature with the included RTD temperature probe. Program features include time to torque, time to stop, ramp, and multistep.

Programmable Viscometers feature 2600 speed selections and the highest speed range, up to 250 rpm. Monitor and display temperature with the included RTD temperature probe. Control the viscometer through a PC using the included software; also includes curves, graphs, and database references.

Optional low viscosity adapters allow measurement down to 1 cp when used with low range viscometers and 3.2 cp when used with medium range viscometers. Model 98965-54 includes a water jacket for attachments to an external circulating bath (not included; go to www.coleparmer.com for our full selection).

What's included: 316 stainless steel spindles (four spindles for the low range and six for the other ranges), spindle protector, stand, carrying case, and universal power supply. Models 98965-43 through -48 also include data logging software; USB cable. Models 98965-49 through -51 also include control software, data logging software, and USB cable.



Cole-Parmer®



Viscosity range	Rotational speed range	Number of selectable speeds	Output	Catalog number	Price
Basic viscometers					
20 to 2,000,000 cp (low)	0.3 to 100 rpm	18	None	TR-98965-40	
100 to 13,000,000 cp (medium)				TR-98965-41	
200 to 106,000,000 cp (high)				TR-98965-42	
Basic viscometers with data logging software and USB cable					
20 to 2,000,000 cp (low)	0.3 to 100 rpm	18	USB	TR-98965-43	
100 to 13,000,000 cp (medium)				TR-98965-44	
200 to 106,000,000 cp (high)				TR-98965-45	
Advanced viscometers with temperature probe, data logging software, and USB cable					
20 to 6,000,000 cp (low)	0.01 to 200 rpm	54	USB	TR-98965-46	
100 to 40,000,000 cp (medium)				TR-98965-47	
200 to 106,000,000 cp (high)				TR-98965-48	
Programmable viscometers with temperature probe, control software, data logging software, and USB cable					
20 to 6,000,000 cp (low)	0.01 to 250 rpm	2600	USB	TR-98965-49	
100 to 40,000,000 cp (medium)				TR-98965-50	
200 to 106,000,000 cp (high)				TR-98965-51	

Specifications

Accuracy: ±1% full-scale

Resolution

<10,000 cp: 0.1 cp
≥10,000 cp: 1 cp

Reproducibility: ±0.2%

Temperature probe (indicated models):

100 Ω Pt RTD; 32 to 212°F (0 to 100°C)

Power: 100 to 240 VAC, 50/60 Hz

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Equipment & Instrumentation

Viscometers

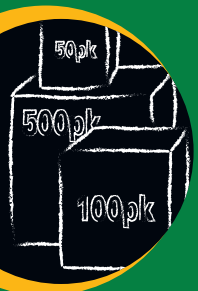
- [TR-98965-54](#) Low-viscosity adapter with water jacket
- [TR-98965-55](#) Low-viscosity adapter
- [TR-17107-01](#) NIST-traceable calibration with data for viscometers

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Stirring Hot Plate page 68



★★★★★
"Excellent product."

WHIRL-PAK® Sterile Sampling Bags, LDPE

Keep samples safe—easy-seal bags hold solids and liquids

- Quick and easy sealing—flip bag around wire/tape and bend to seal
- No more poking—puncture-proof tabs keep wire intact even after extensive use

Sampling Bags are available with or without a white labeling area.

"Speci-Sponge" Bags are designed to sample surfaces and equipment for *Listeria*, *Salmonella*, and other food-borne pathogens; contain a 1½" x 3" (3.8 x 7.6 cm) sponge that is free of bactericides and noninhibitory; with white labeling area.

Sodium Thiosulfate Bags are EPA-compliant for potable water collection; contain a nontoxic, nonnutritive 10-mg active ingredient tablet of sodium thiosulfate to neutralize the chlorine at the point of collection; with white labeling area.

High-Temperature Bag is for hot fill samples with a temperature up to 215°F (102°C). The FDA-compliant film is a blend of low-density polyethylene and nylon that will hold liquids, solids, sauces, gravies, and other samples having a high temperature. Bag is self standing and does not need a rack or special holder to keep it upright, making sample collection safe and easy. With white labeling area. **Caution:** Do not put bag in boiling water.



Buy More...Save More!
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases



Capacity oz (mL)	Size (W x L)	Thickness (mil)	Catalog number	Qty/pk	Price/pk
Sampling bags without white labeling area					
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.25	TR-06499-10	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	TR-06499-20	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	TR-06499-30	500	
36 (1065)	5" x 15" (12.7 x 38.1 cm)	3.0	TR-06499-40	500	
42 (1242)	6" x 15" (15.2 x 38.1 cm)	3.0	TR-06499-50	500	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	3.0	TR-06499-54	500	
Standup sampling bags with white labeling area					
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.5	TR-06499-16	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	3.0	TR-06499-21	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	TR-06499-31	500	
27 (798)	5" x 12" (12.7 x 30.5 cm)	3.0	TR-06499-32	250	
36 (1065)	5" x 15" (12.7 x 38.1 cm)	4.0	TR-06499-33	250	
42 (1242)	6" x 15" (15.2 x 38.1 cm)	4.0	TR-06499-34	250	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	4.0	TR-06499-35	250	
Sampling bags with white labeling area					
2 (58)	3" x 5" (7.6 x 12.7 cm)	2.5	TR-06499-60	500	
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.25	TR-06499-70	500	
7 (207)	3¾" x 7" (9.5 x 17.8 cm)	2.5	TR-06499-72	500	
13 (384)	5¼" x 7½" (13.3 x 19.1 cm)	2.5	TR-06499-74	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	TR-06499-80	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	TR-06499-85	500	
27 (798)	5" x 12" (12.7 x 30.5 cm)	3.0	TR-06499-87	500	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	3.0	TR-06499-89	500	
92 (2721)	10" x 15" (25.4 x 38.1 cm)	4.0	TR-06499-94	250	
123 (3637)	10" x 20" (25.4 x 50.8 cm)	4.0	TR-06499-98	250	
184 (5441)	15" x 20" (38.1 x 50.8 cm)	4.0	TR-06499-99	100	
"Speci-Sponge" bags for surface sampling with sponge					
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	TR-06499-13	100	
55 (1627)	7½" x 11¼" (19.1 x 29.8 cm)	4.0	TR-06499-14	100	
18 (532)	4" x 9" (10.2 x 22.9 cm)	2.5	TR-06499-52†	100	
Sodium thiosulfate bags for water sampling with tablet					
3¾ (100)	3" x 7¼" (7.6 x 18.4 cm)	2.5	TR-06499-90	100	
10½ (300)	4½" x 9" (11.4 x 22.9 cm)	2.5	TR-06499-95	100	
High-temperature bag					
18 (532)	4½" x 9" (11.4 x 22.9 cm)	3.0	TR-06498-16	500	

†Model 06499-52 has a sterile glove.

TR-66203-10 Carrying rack for 2- and 4-oz bags. Double-grid design keeps bags upright and has 15 compartments. Vinyl coated, autoclavable

TR-66203-00 Carrying rack for 18-oz bags. Double-grid design keeps bags upright. Rack has 20 compartments. Vinyl coated, autoclavable

TR-06498-12 Water scoop, 18" (45.7 cm) L coated handle. Two alligator clips hold a variety of bag sizes

TR-06498-14 Mailing tube for 3¾-oz (100 mL) sodium thiosulfate bag. Polyethylene, 5"L x 2" dia (12.7 x 5.1 cm)



Standup bags stay upright



Water scoop holds bag open for easy filling



Mailing tube



Rack

Bags

Lab Supplies

Cole-Parmer® Tri-Corner Beakers, PP

Easy pouring from three sides

- Easily mix on stirrer—flat bottom keeps stir bars centered
- Accurate to ±5% with molded graduations
- Withstand temperatures to 250°F (121°C)
- Autoclavable



Buy More...Save More!
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Graduations (mL)	Catalog number	Qty/pk	Price/pk
50 (1.5)	10	TR-06020-01	100	
100 (3.5)	10	TR-06020-03		
250 (8)	20	TR-06020-05		
400 (13)	40	TR-06020-07	100	
800 (26)	50	TR-06020-09		
1000 (32)	50	TR-06020-11		
Five of each above	—	TR-06010-07	30	

DON'T RISK IT!

Our chemical compatibility database provides important information on chemical resistance—check it out at ColeParmer.com/ChemChart



Cole-Parmer® Broad-Spout Beakers, PTFE

Stand up to the harshest chemicals

- Pour easily with broad spout
- Heatable beakers can be used on hot plates to 518°F (270°C)
- Autoclavable

Heatable beaker 06300-02 has a PTFE carbon base.



Buy More...Save More!
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Beaker			Optional cover		
	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk
Heatable beakers with PTFE-carbon base, for use on hot plates						
100 (3)	TR-06300-02	1		TR-06300-87	1	
250 (8)	TR-06300-04	1		TR-06300-91	1	
400 (13)	TR-06300-06	1		TR-06300-93	1	
Beakers						
1 (0.03)	TR-06300-62	2		TR-06300-79	2	
5 (1.17)	TR-06300-64	2		TR-06300-81	2	
10 (0.3)	TR-06300-66	2		TR-06300-81	2	
25 (0.8)	TR-06300-68	2		TR-06300-83	2	
50 (1.6)	TR-06300-74	1		TR-06300-85	1	
100 (3)	TR-06300-76	1		TR-06300-87	1	
150 (5)	TR-06300-78	1		TR-06300-89	1	
250 (8)	TR-06300-82	1		TR-06300-91	1	
400 (13)	TR-06300-84	1		TR-06300-93	1	
500 (16)	TR-06300-86	1		TR-06300-93	1	
600 (20)	TR-06300-88	1		TR-06300-95	1	
1000 (32)	TR-06300-92	1		TR-06300-95	1	
2000 (64)	TR-06300-94	1		TR-06300-97	1	
5000 (170)	TR-06300-96	1		TR-06300-99	1	

Disposable Griffin Low-Form Beakers, PP

Molded-in graduations won't wear off

- No need to convert volumes—graduated in mL and oz
- Won't stick together—stacking rib for easier separation
- Autoclavable



Buy More...Save More!

20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Graduations (mL)	Catalog number	Qty/pk	Price/pk
15 (0.5)	5	TR-06006-12	100	
15 (0.5)	5	TR-06006-15	1000	
30 (1)	5	TR-06006-22	100	
30 (1)	5	TR-06006-25	1000	
50 (1.7)	5	TR-06006-32	100	
50 (1.7)	5	TR-06006-35	1000	
100 (3.5)	5	TR-06006-42	100	
100 (3.5)	5	TR-06006-45	1000	
150 (5)	5	TR-06006-52	100	
150 (5)	5	TR-06006-55	1000	
250 (8)	10	TR-06006-63	50	
250 (8)	10	TR-06006-65	500	
400 (13)	25	TR-06006-72	50	
400 (13)	25	TR-06006-75	500	
600 (20)	25	TR-06006-83	25	
600 (20)	25	TR-06006-85	500	

Graduated Beakers with Easy-Grip Handles

Sturdy handle

- Always know your volume—molded-in graduations never rub off
- Choose the right material for your application—available in PMP, HDPE, PP, PC, and PFA



Buy More...Save More!

20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Graduations (mL)	Qty/pk	Catalog number	Price/pk
Thermo Scientific™ Nalgene™ polymethylpentene (PMP) beakers				
1000 (32)	5	1	TR-06004-97	
3000 (96)	10		TR-06004-99	
Thermo Scientific Nalgene high-density polyethylene (HDPE) beakers				
1000 (32)	100	1	TR-06005-10	
3000 (96)	200		TR-06005-20	
Polypropylene (PP) beakers				
50 (1.5)	10	1	TR-06100-97	
100 (3.5)	20		TR-06100-99	
250 (8)	5		TR-06008-35	
500 (16)	10		TR-06008-40	
1000 (32)	10	1	TR-06008-50	
2000 (64)	20		TR-06008-60	
3000 (96)	50		TR-06008-70	
5000 (160)	100		TR-06008-80	
Polycarbonate (PC) beakers				
470 (16)	25	1	TR-06004-80	
950 (32)	50		TR-06004-85	
1900 (64)	250		TR-06004-90	
3800 (128)	500		TR-06004-95	
Thermo Scientific Nalgene PFA beakers				
1000 (32)	50	1	TR-06006-00	
3000 (96)	125		TR-06006-05	



PYREX® Brand 1003 Heavy-Duty Griffin Beakers

Get the best strength even under harsh conditions

- Measure initial quantity and how much is used—double metric scale on 250- to 4000-mL sizes
- Know your solution—extra-large marking spot for easier identification
- Reference: ASTM E-960



Buy More...Save More!

15% off on 10+ packs or cases 10% off on 5 to 9 packs or cases

Capacity mL (oz)	Graduation range (mL)	Graduation interval (mL)	Catalog number	Qty	Price
150 (5)	20 to 140	20	TR-34512-06	12/pk	
150 (5)	20 to 140	20	TR-34512-26	48/cs	
250 (8)	25 to 200	25	TR-34512-07	12/pk	
250 (8)	25 to 200	25	TR-34512-27	48/cs	
400 (13)	25 to 325	25	TR-34512-08	12/pk	
400 (13)	25 to 325	25	TR-34512-28	48/cs	
600 (20)	50 to 500	50	TR-34512-09	6/pk	
600 (20)	50 to 500	50	TR-34512-29	36/cs	
1000 (32)	50 to 1000	50	TR-34512-11	6/pk	
1000 (32)	50 to 1000	50	TR-34512-31	24/cs	
2000 (64)	200 to 1800	200	TR-34512-13	4/pk	
2000 (64)	200 to 1800	200	TR-34512-33	8/pk	
4000 (128)	500 to 3500	250	TR-34512-15	1/pk	
4000 (128)	500 to 3500	250	TR-34512-35	4/pk	

Cole-Parmer® Class A Griffin Low-Form Graduated Glass Beakers

Easy readings and exceptional durability

NEW

- Double-scale graduations for easy measuring while pouring in or out
- Meet ASTM E960 specifications for Class A borosilicate glass beakers
- Stand up to temperatures of 445°F (230°C) for long-term, or 752°F (400°C) for short-term
- Autoclavable



Buy More...Save More!

15% off on 10+ packs or cases 10% off on 5 to 9 packs or cases



Capacity mL (oz)	Graduation interval (mL)	Catalog number	Qty/pk	Price/pk
10 (1/3)	—	TR-34503-42 [†]	12	
25 (7/8)	5	TR-34503-44	12	
50 (1 3/4)	10	TR-34503-46	12	
100 (3)	10	TR-34503-48	12	
150 (5)	20	TR-34503-50	12	
250 (8)	25	TR-34503-52	12	
400 (13)	25	TR-34503-54	12	
600 (20)	50	TR-34503-56	6	
1000 (32)	50	TR-34503-58	6	
2000 (64)	100	TR-34503-60	4	
3000 (96)	125	TR-34503-62	1	
5000 (160)	250	TR-34503-64	1	

[†]The 10-mL beaker does not have graduations

Cole-Parmer® Beakers and Covers, 304 SS (medium gauge)

Recessed covers for easy storage



Buy More...Save More!

20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases



Capacity L (qt)	Qty/pk	Beakers		Optional covers	
		Catalog number	Price/pk	Catalog number	Price/pk
1.2 (1 1/4)	1	TR-07206-10		TR-07207-10	
1.9 (2)	1	TR-07206-20		TR-07207-20	
3.1 (3 1/4)	1	TR-07206-30		TR-07207-30	
4.5 (4 3/4)	1	TR-07206-40		TR-07207-40	
5.8 (6 1/8)	1	TR-07206-60		TR-07207-60	
7.6 (8)	1	TR-07206-80		TR-07207-80	
11.4 (12)	1	TR-07206-90		TR-07207-90	

Cole-Parmer® Griffin Low Form Beakers, SS (medium gauge)

Get durable, economical mixing capabilities



- Sturdy vessels for general stirring or measuring of solutions



Buy More...Save More!

20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases



Capacity, mL (oz)	Catalog number	Qty/pk	Price/pk
125 (4.2)	TR-07205-30	1	
250 (8.5)	TR-07205-40	1	
600 (20.3)	TR-07205-50	1	
1200 (40.6)	TR-07205-60	1	
2000 (67.6)	TR-07205-70	1	
3000 (101.4)	TR-07205-80	1	
4000 (135.3)	TR-07205-90	1	

Beakers

Lab Supplies

Cole-Parmer® Class A Glass Media Bottles

NEW

Easy pouring,
wide-mouth opening

- Ideal of mixing, storing, and sampling
- Get quick identification—large marking spot and graduations
- Autoclavable PP cap and bottle



Capacity mL (oz)	Graduation range (mL)	Graduation interval (mL)	Thread size	Catalog number	Qty/ cs	Price/ cs
100 (3)	20 to 80	25	GL45	TR-34505-72	10	
250 (8)	50 to 200	50		TR-34505-74	10	
500 (16)	100 to 400	100		TR-34505-76	10	
1000 (32)	100 to 900	100	GL45	TR-34505-78	10	
2000 (64)	400 to 1800	100		TR-34505-80	4	

Environmental Express® Disposable BOD Bottles

Reduce contamination
and increase test
accuracy

- No precleaning required!
- Laboratory tested and US EPA approved
- Unbreakable and recyclable
- Packed in plastic-lined boxes to eliminate dust and residue



NEW

ENVIRONMENTAL EXPRESS®

Capacity	Catalog number	Qty/pk	Price/pk
300 mL	TR-53200-02	100	

[TR-53200-12](#) BOD bottle stopper, acrylic. Pack of 25

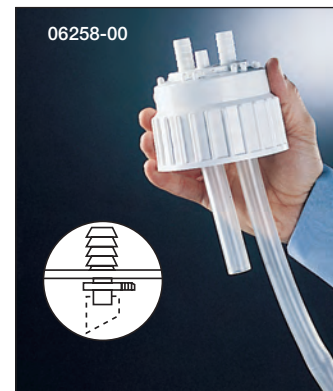
[TR-53200-14](#) BOD overcap prevents evaporation. Pack of 50

Thermo Scientific™ Nalgene™ Filling/Venting Caps, PP

Quick and easy aseptic
liquid transfer

Filling/Venting Caps have thermoplastic elastomer (TPE) gaskets to allow aseptic liquid transfer. Include 6" (15 cm) and 30" (76 cm) lengths of platinum-cured silicone tubing. Autoclavable.

Fitting Kits include two PP fittings, two acetal nuts, two silicone gaskets, thermoplastic elastomer (TPE) port cap, instructions, and template. Autoclavable.



Buy More...Save More!

20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Tubing ID	Ports	Cap size	Catalog number	Qty/ pk	Price/ pk
Filling/venting caps					
1/2"	2 tubing, 1 venting	83B	TR-06258-00	1	
1/4"		53B	TR-06258-10	1	
1/4"		83B	TR-06258-20	1	
Barbed bulkhead fitting kits					
1/4"	—	—	TR-06259-10	2	
1/2"	—	—	TR-06259-00	2	

Thermo Scientific™ Nalgene™ Heavy-Duty Bottles, PP

Withstand repeated full
vacuum applications

- Use under repeated full vacuum for 24 hours at 68°F (20°C)
- PP closure with thermoplastic elastomer (TPE) gasket
- Autoclavable



Buy More...Save More!

20% off on 120+
15% off on 30 to 119
10% off on 6 to 29 packs or cases

Capacity, mL (oz)	Cap size	Catalog number	Qty/pk	Price/pk
250 (8)	53B	TR-06257-05	6	
1000 (32)		TR-06257-10	6	
2000 (64)		TR-06257-20	2	
4000 (128)	83B	TR-06257-00	1	
5000 (160)		TR-06257-30		



Graduated Sample Containers, PP

No more leaks—leakproof for better sampling

- Easier sampling—graduated for measuring directly
- Durable design—translucent, unbreakable, and chemical resistant
- Sterile containers are individually wrapped



Buy More...Save More!

20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Description	Catalog number	Qty/pk	Price/pk
118 (4)	Sterile, no tab	TR-06049-40	100	
118 (4)	Nonsterile with white tab	TR-06049-50	500	

Thermo Scientific™ Nalgene™ Wide-Mouth Bottles, LDPE

Get better sample visibility

- Translucent material provides flexibility and impact resistance
- Ideal for shipping liquids—include leakproof polypropylene (PP) screw caps



Buy More...Save More!

20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Cap size	Catalog number	Qty/pk	Price/pk
30 (1)	28 mm	TR-06043-10	12	
60 (2)	28 mm	TR-06043-20		
125 (4)	38 mm	TR-06043-30		
250 (8)	43 mm	TR-06043-40	12	
500 (16)	53 mm	TR-06043-50		
1000 (32)	63 mm	TR-06043-60	6	

Sample Bottles, HDPE

Store samples without breaking your budget

- Provide good chemical resistance for a wide range of uses
- Bottles are made of HDPE; included cap is made of polypropylene and lined with polyethylene foam
- Easy mailing with optional mailing tube (sold separately)



Buy More...Save More!

20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Qty/pk	Catalog number	Price/pk
180 (6)	300	TR-06043-01	
250 (8)	329	TR-06049-01	
500 (16)	198	TR-06050-05	

[TR-06049-30](#) Mailing tubes for bottle 06049-01. Carton of 240

Qorpak® Precleaned Glass Sample Bottles

Save time—no need to prewash bottles

- Vacuum and ionization process removes contaminants such as dirt, dust, carton lint, oil, aerosols, and fine glass particles
- Individually sealed for long-term storage with no contamination
- Bottles come with PTFE-lined caps; jars are available with PTFE-lined or pulp/vinyl-lined caps
- Clear wide-mouth square glass bottles have French square design for a more efficient use of shelf space while making the container easier to grip when pouring



Buy More...Save More!

15% off on 10+ packs or cases 10% off on 5 to 9 packs or cases

Capacity mL (oz)	Neck size (mm)	Catalog number	Qty/cs	Price/cs
A. Clear narrow-mouth bottles				
30 (1)	20	TR-34606-00	48	
60 (2)	20	TR-34606-10		
120 (4)	22	TR-34606-20		
240 (8)	24	TR-34606-30		
480 (16)	28	TR-34606-40	12	
960 (32)	33	TR-34606-50		
B. Clear wide-mouth square glass bottles				
15 (½)	20	TR-34610-00	48	
30 (1)	24	TR-34610-10		
60 (2)	28	TR-34610-20		
120 (4)	33	TR-34610-30	24	
240 (8)	43	TR-34610-40		
480 (16)	48	TR-34610-50		
960 (32) [†]	58	TR-34610-60		
C. Amber narrow-mouth glass bottles				
60 (2)	20	TR-34607-00	24	
120 (4)	22	TR-34607-10		
240 (8)	24	TR-34607-20		
480 (16)	28	TR-34607-30	12	
960 (32)	33	TR-34607-40		
D. Amber wide-mouth glass bottles				
30 (1)	28	TR-34609-00	24	
60 (2)	33	TR-34609-10		
120 (4)	38	TR-34609-20		
240 (8)	45	TR-34609-30		
480 (16)	53	TR-34609-40	12	
960 (32)	53	TR-34609-50		
E. Clear wide-mouth glass jars with PTFE lined caps				
30 (1)	43	TR-34608-00	48	
60 (2)	53	TR-34608-10		
120 (4)	58	TR-34608-20		
270 (9)	70	TR-34608-30		
480 (16)	89	TR-34608-40	12	
960 (32)	89	TR-34608-50		
F. Clear wide-mouth glass jars with pulp/vinyl lined caps (not shown)				
30 (1)	43	TR-34608-05	48	
60 (2)	53	TR-34608-15		
120 (4)	58	TR-34608-25		
270 (9)	70	TR-34608-35		
480 (16)	89	TR-34608-45	12	
960 (32)	89	TR-34608-55		

[†]Graduated in mL and oz.

Bottles

Lab Supplies



Cole-Parmer® Wide-Mouth Bottles, LDPE, HDPE, PP

Wide-mouth opening provides easier filling and sampling

- Offered in pack quantities or bulk pack quantities to meet your specific requirements
- Reliable and sturdy
- Choose from three materials; all include a leakproof PP closure

HDPE Bottles are manufactured with FDA-compliant resin for noncontaminating storage of chemicals and food-grade products.

LDPE Bottles are translucent and ideal for food and general-use laboratory applications.

PP Bottles are rigid and offer superior chemical resistance; perfect for storage and sampling of liquids and solids. **Autoclavable.**



Buy More...Save More!

- 20% off on 120+
- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases



Capacity mL (oz)	Cap size	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/cs	Price/cs
HDPE							
60 (2)	22 mm	TR-06045-18	12		TR-06045-23	72	
125 (4)	28 mm	TR-06045-24	12		TR-06045-25	72	
250 (8)	28 mm	TR-06045-26	12		TR-06045-27	72	
500 (16)	28 mm	TR-06045-28	12		TR-06045-29	48	
1000 (32)	28 mm	TR-06045-44	6		TR-06045-31	24	
2000 (64)	45 mm	TR-06045-46	1		TR-06045-33	6	
LDPE							
60 (2)	22 mm	TR-06045-02	12		TR-06045-03	72	
125 (4)	28 mm	TR-06045-04	12		TR-06045-05	72	
250 (8)	28 mm	TR-06045-06	12		TR-06045-07	72	
500 (16)	28 mm	TR-06045-08	12		TR-06045-09	48	
1000 (32)	28 mm	TR-06045-14	6		TR-06045-11	6	
PP							
30 (1)	22 mm	TR-06045-48	12		TR-06045-41	72	
60 (2)	22 mm	TR-06045-56	12		TR-06045-43	72	
125 (4)	28 mm	TR-06045-58	12		TR-06045-45	72	
250 (8)	28 mm	TR-06045-62	12		TR-06045-47	72	
500 (16)	28 mm	TR-06045-66	12		TR-06045-49	48	
1000 (32)	28 mm	TR-06045-68	6		TR-06045-51	24	
2000 (64)	45 mm	TR-06045-74	1		TR-06045-53	6	

Bottles

Collapsible Containers, LDPE

Won't take up extra space—easily expand when filled

- Stack neatly when empty, just unscrew cap and fill to expand
- Include polypropylene caps

Buy More...Save More!

- 20% off on 120+
- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases



Capacity L (gallon)	Cap size	Qty/pk	Catalog number	Price/pk
1 (1/4)	38 mm	12	TR-06100-10	
4 (1)			TR-06100-20	
10 (2 1/2)	38 mm	10	TR-06100-30	
19 (5)			TR-06100-40	

Thermo Scientific™ Nalgene™ Economy Wide-Mouth Bottles, HDPE

Rugged design fits all your needs

- Leakproof, PP enclosure

Buy More...Save More!

- 20% off on 120+
- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Cap size	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/cs	Price/cs
30 (1)	28 mm	TR-06035-31	12		TR-06035-33	72	
60 (2)	28 mm	TR-06035-35			TR-06035-37		
125 (4)	38 mm	TR-06035-39			TR-06035-41		
250 (8)	43 mm	TR-06035-43	12		TR-06035-45	72	
500 (16)	53 mm	TR-06035-47	6		TR-06035-49	48	
1000 (32)	63 mm	TR-06035-51	6		TR-06035-53	24	



Teky's Tips



Caring for Your Plasticware

Washing Plastics with a Mild Detergent is sufficient for most general applications. Be sure to rinse with tap water, then rinse again with distilled water. Most plastics, particularly the polyolefins (PPCO, PP, PMP, LDPE, and HDPE), have nonwetting surfaces that resist attack and are easy to clean. Do not use abrasive cleaners or scouring pads on plastic labware. Do not use strong alkaline cleaning agents with polycarbonate (PC).

Ultrasonic Cleaners can be used as long as labware does not rest on the bottom of the tank. Use a cleaning basket for best results.

Lab Supplies



Solid-Design Cable Ties, Nylon

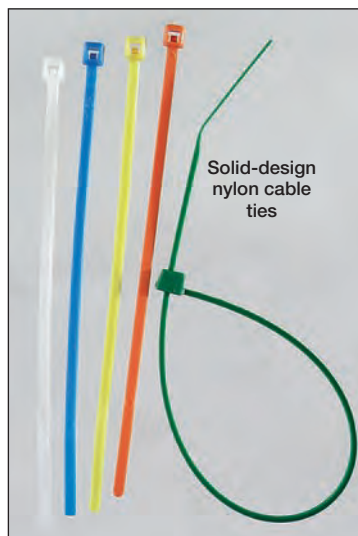
Won't corrode or stretch—made from injection-molded plastic

- Simply bend tip and pull through locking mechanism to secure
- Won't lose tension—even in vibrating, oily, or wet environments
- Withstand temperatures to 185°F (85°C), with melting point of 495°F (257°C)

Black ties are UV and weather resistant from -40 to 221°F (-40 to 105°C). UL-component recognized and self-extinguishing as per UL 94 Flam. class: V-2. Meet military specification MS3367.



Length	Bundle diameter	Color	Catalog number	Qty/pk	Price/pk
Miniature, 18-lb tensile strength					
4" (10.2 cm)	7/8" (2.2 cm)	White	TR-06830-66	100	
			TR-06830-52	1000	
			TR-06830-51†	1000	
4" (10.2 cm)	7/8" (2.2 cm)	Black	TR-06830-68	100	
			TR-06830-11	100	
4" (10.2 cm)	7/8" (2.2 cm)	Red	TR-06830-61	1000	
			TR-06830-12	100	
4" (10.2 cm)	7/8" (2.2 cm)	Blue	TR-06830-62	1000	
			TR-06830-63	1000	
4" (10.2 cm)	7/8" (2.2 cm)	Green	TR-06830-64	1000	
			TR-06830-65	1000	
4" (10.2 cm)	7/8" (2.2 cm)	Yellow	TR-06830-65	1000	
			TR-06830-65	1000	
Intermediate, 40-lb tensile strength					
5 1/2" (14.0 cm)	1 1/4" (3.2 cm)	White	TR-06830-54	1000	
5 1/2" (14.0 cm)	1 1/4" (3.2 cm)	Black	TR-06830-78	100	
8" (20.3 cm)	2 1/8" (5.4 cm)	White	TR-06830-30	1000	
			TR-06830-89	100	
8" (20.3 cm)	2 1/8" (5.4 cm)	Black	TR-06830-88	1000	
			TR-06830-31	1000	
8" (20.3 cm)	2 1/8" (5.4 cm)	Red	TR-06830-32	1000	
			TR-06830-32	1000	
8" (20.3 cm)	2 1/8" (5.4 cm)	Blue	TR-06830-33	1000	
			TR-06830-33	1000	
8" (20.3 cm)	2 1/8" (5.4 cm)	Green	TR-06830-19	100	
			TR-06830-19	100	
8" (20.3 cm)	2 1/8" (5.4 cm)	Yellow	TR-06830-34	1000	
			TR-06830-34	1000	
8" (20.3 cm)	2 1/8" (5.4 cm)	Orange	TR-06830-41	1000	



Solid-design nylon cable ties

06830-51 and -55 have a write-on identification tab



Length	Bundle diameter	Color	Catalog number	Qty/pk	Price/pk
Standard, 50-lb tensile strength					
7 1/2" (19.1 cm)	1 3/4" (4.4 cm)	White	TR-06830-43	100	
			TR-06830-56	1000	
			TR-06830-55†	1000	
11" (27.9 cm)	3" (7.6 cm)	White	TR-06830-47	100	
			TR-06830-46	1000	
11" (27.9 cm)	3" (7.6 cm)	Black	TR-06830-49	100	
			TR-06830-48	1000	
15" (38.1 cm)	4" (10.2 cm)	White	TR-06830-58	100	
15" (38.1 cm)	4" (10.2 cm)	Black	TR-06830-29	100	
Heavy duty, 120-lb tensile strength					
14 1/2" (36.8 cm)	4" (10.2 cm)	White	TR-06830-36	50	
			TR-06830-91	100	
24" (61.0 cm)	7" (17.8 cm)	White	TR-06830-38	50	
28" (71.1 cm)	8" (20.3 cm)	White	TR-06830-39	50	
Extra heavy duty, 175-lb tensile strength					
34" (86.4 cm)	10" (25.4 cm)	White	TR-06830-42	50	

†Ties 06830-51 and -55 have a textured, write-on identification tab.

Autoclavable Solid-Design Cable Ties, PP

Keep items bundled during autoclaving

Polypropylene (PP) cable ties resist a number of chemicals and are UV-resistant. Sold in packs of 1000.



Length	Bundle dia	Tensile strength	Color	Catalog number	Price/ pk of 1000
4" (10.2 cm)	3/4" (1.9 cm)	11 lb	Natural	TR-06830-85	
8" (20.3 cm)	1 3/4" (4.4 cm)	25 lb	Black	TR-06830-95	

Crescent® Plastic-Cutting Diagonal Pliers

Get close and accurate cutting

These solid-joint diagonal pliers are designed specifically for cutting plastic material. Extra slim design, ground-flat back, oval-shaped jaws, and flush ground cutting edges permit close trimming and accurate cutting in tight areas. Vinyl cushion grips and coil springs provide user comfort and reduce fatigue. Pliers measure 6" (15.2 cm) L; nose measures 27/32" (21 mm) L x 47/64" (19 mm) W.



Description	Catalog number	Price
Plastic-cutting diagonal pliers	TR-97109-25	

Cable Ties

Lab Supplies

Thermo Scientific™ Nalgene™ FDA-Compliant Carboys, PP

Get a better grip with
two-handle construction

- Dispense solutions more quickly with optional spigot models—accept ¼", ½", or ⅝" ID tubing
- Leakproof polypropylene (PP) cap
- Autoclavable



Buy More...Save More!

- 20% off on 120+
- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases

Liters (gallons)	Cap size	Catalog number	Qty/pk	Price/pk
FDA-compliant carboys, USP Class VI				
10 (2½)	83B	TR-06063-12	1	
20 (5)	83B	TR-06063-22		
50 (13)	83B	TR-06063-32		
FDA-compliant carboys with spigot, USP Class VI				
10 (2½)	83B	TR-06064-50	1	
20 (5)	83B	TR-06064-60		
50 (13)	83B	TR-06064-70		

Carboys

Cole-Parmer® Economical Heavy-Duty Carboys with Shoulder Handle, PP

Sturdy, octagonal design
for added rigidity

- Easier filling and pouring with offset neck
- Leakproof spigot models have tube fitting for easier filling of containers
- Polypropylene closure reduces evaporation
- Autoclavable



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- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases

Cole-Parmer®

Liters (gallons)	Cap size	Catalog number	Qty/pk	Price/pk
Heavy-duty carboys with shoulder handle				
5 (1¼)	45 mm	TR-62507-00	1	
10 (2½)	90 mm	TR-62507-10	1	
20 (5¼)	90 mm	TR-62507-20	1	
Heavy-duty carboys with shoulder handle and spigot				
5 (1¼)	45 mm	TR-62507-05	1	
10 (2½)	90 mm	TR-62507-15	1	
20 (5¼)	90 mm	TR-62507-25	1	

Thermo Scientific™ Nalgene™ Round Carboys, LDPE

No more leaks

- Leakproof, polypropylene cap for no worry transport
- Make transport easy with easy-grip handles
- Withstand corrosive materials
- Maintain adequate levels of solution—larger than 10-L carboys indicate 1-gallon and 5-liter increments
- Dispense easily with spigot models



Buy More...Save More!

- 20% off on 120+
- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases

Liters (gallons)	Cap size	Catalog number	Qty/pk	Price/pk
Carboys with shoulder handles				
10 (2½)	83B	TR-06031-32	1	
15 (4)	83B	TR-06031-42		
20 (5)	83B	TR-06031-52		
25 (6½)	83B	TR-06031-62		
50 (13)	83B	TR-06031-72		
Wide-mouth carboys with shoulder handles				
10 (2½)	100 mm	TR-06056-22	1	
15 (4)	100 mm	TR-06056-32		
20 (5)	100 mm	TR-06056-52		
Carboy with spigot and shoulder handles				
4 (1)	38-430	TR-06065-10	1	
10 (2½)	83B	TR-06065-22		
20 (5)	83B	TR-06065-32		
25 (6½)	83B	TR-06065-52		
50 (13)	83B	TR-06065-62		
Carboys with ½" OD tubulation and shoulder handles				
10 (2½)	83B	TR-06080-42	1	
20 (5¼)	83B	TR-06080-52		

Accessories

- [TR-06258-30](#) Replacement cap, PP, 83B. Pack of 2
- [TR-63000-16](#) Replacement cap, PP, 100 mm. Pack of 12
- [TR-63000-18](#) Replacement cap, PP, 38-430. Pack of 12
- [TR-06070-22](#) Replacement spigot, PP

Lab Supplies



Cole-Parmer® Heavy-Walled Carboys, HDPE

Don't worry about shipping!

NEW

- Resistant to most chemicals
- Effortless transport via heavy-duty swing handle

Narrow-Mouth Carboys come with rubber O-ring and HDPE closure with tag holes for identification. Available with or without leakproof spigot.

Wide-Mouth Carboys feature LDPE neck insert plug for maximum security.



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Capacity L (gal.)	Cap size mm	Catalog number	Qty/pk	Price/pk
Narrow-mouth carboy				
5 (1¼)	46	TR-06035-93	1	
10 (2½)	55	TR-06035-95	1	
25 (6½)	55	TR-06035-97	1	
50 (13)	55	TR-06035-99	1	
Narrow-mouth carboys with spigot				
5 (1¼)	46	TR-06035-81	1	
10 (2½)	55	TR-06035-83	1	
25 (6½)	55	TR-06035-85	1	
50 (13)	55	TR-06035-87	1	
Wide-mouth carboys with neck insert				
5 (¼)	90	TR-06035-89	1	
10 (2½)	120	TR-06035-91	1	

[TR-06035-76](#) Replacement spigot

Cole-Parmer® Disposable Lab Containers, POCO

No more wasted space—containers stack easily

- Durable for longer use—stand up to boiling, freezing, and most chemicals
- Know what's inside—translucent containers come with tight-fitting lids



Buy More...Save More!

\$ 20% off on 120+
 15% off on 30 to 119
 10% off on 6 to 29 packs or cases



Capacity mL (oz)	Catalog number	Qty/pk	Price/pk
120 (4)	TR-06727-00	250	
240 (8)	TR-06727-10	250	
480 (16)	TR-06727-20	100	
960 (32)	TR-06727-30	100	
2000 (64)	TR-06727-35	50	
2500 (83)	TR-06727-42	25	
5000 (170)	TR-06727-50	25	

Baritainer® Jerry Cans, HDPE/Quoral®

More environmentally friendly design

- Great alternative to glass, metal, or fluorinated containers
- Safely transport chemicals, solvents, adhesives, and cleaning solutions
- Use in temperatures from -148 to 248° (-100 to 120°C)



Buy More...Save More!

\$ 20% off on 120+
 15% off on 30 to 119
 10% off on 6 to 29 packs or cases

Liters (gallons)	Cap size	Catalog number	Qty/pk	Price/pk
5 (1¼)	53 mm	TR-06069-01	1	
10 (2½)	53 mm	TR-06069-03	1	
20 (5¼)	63 mm	TR-06069-05	1	

Hinged-Lid Sample Containers, PP

Stop losing lids

- Attached lid is always close at hand
- Won't leak or spill when closed
- FDA-compliant
- Autoclavable



Buy More...Save More!

\$ 20% off on 120+
 15% off on 30 to 119
 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Dimensions (H x OD)		Catalog number	Qty/pk	Price/pk
	in.	cm			
7.5 (¼)	¾ x 1½	1.6 x 3.8	TR-66098-00	2500	
15 (½)	¾ x 1½	1.9 x 3.8	TR-66098-10	2000	
22.5 (¾)	1 x 1½	2.5 x 3.8	TR-66098-20	1500	
30 (1)	1½ x 1½	3.8 x 3.8	TR-66098-30	1300	
60 (2)	1¾ x 2	4.1 x 5.1	TR-66098-40	750	
120 (4)	3¼ x 2	8.1 x 5.1	TR-66098-50	300	

[TR-06098-02](#) Labels for containers 66098-40 and -50. Pack of 1000

Carboys / Containers

Lab Supplies

Cole-Parmer® Cleaning Products

Easily clean glass, metal, plastic, rubber, and other hard materials

- Safe and effective cleaning products
- Highly concentrated, aqueous solutions are free-rinsing
- Meet USDA guidelines for incidental contact with food processing systems
- Do not contain CFCs, phosphates, silicates, halogens, or phenols



Cleaning Solutions

Cleaner	Type	Cleaning applications	Dilution	pH	Packaging	Cat. no.	Price/ea	Cat. no.	Qty/cs	Price/cs
Micro-90®	Ionic, nonionic, USDA authorized	Manual or ultrasonic; removes most biological materials; cleans glass, most metals, plastic, and rubber†	1:100 to 2:100	9.5	0.26 gal. (1 L)	TR-18100-05		TR-18100-04	12	
					1 gal. (4 L)	—		TR-18100-11	4	
					5 gal. (18.9 L)	—		TR-18100-20	1	
					55-gal. drum (208 L)	TR-18100-30		—	—	
Zymit®	Enzymatic, USDA authorized	Machine, manual, or ultrasonic; dissolves protein and starch-based soils; may use for delicate materials	1:100	7.5	0.26 gal. (1 L)	TR-18101-30		TR-18101-20	12	
LF2100™	Low-sudsing, anionic, nonionic, amphoteric, USDA authorized	Automatic washers, high-pressure and high agitation applications†	1:100	9.7	0.26 gal. (1 L)	TR-18102-00		TR-18102-10	12	
					5.3 gal. (20 L)	TR-18102-30		—	—	
Surface-Cleanse/930®	Nonionic, USDA authorized	Cleans grease, petroleum, oils from glass, aluminum, lead, zinc, and plastic without surface damage	1:200	7.0	0.26 gal. (1 L)	TR-18103-00		TR-18103-10	12	
					5.3 gal. (20 L)	TR-18103-30		—	—	
Micro-A07®	Citric acid, nonionic, USDA authorized	Removes millstone, hard water scale, rust, mineral deposits, and other inorganic soils from filter membranes, labware, and industrial equipment	1:100 to 2:100	2.5	0.26 gal. (1 L)	TR-18104-00		TR-18104-01	12	
					5.3 gal. (20 L)	TR-18104-30		—	—	

†Do not use on zinc, magnesium, or aluminum.

Lab Supplies

DisCide® ULTRA Disinfecting Towelettes and Sprays

No wasting time—works in just one minute!

- No mixing or measuring—solutions are ready to use
- Eliminate separate towel requirements with towelettes



Description	Packaging	Qty/cs	Catalog number	Price
Towelettes, 6" x 6¾" (15.2 x 17.1 cm)	Canister of 160	12	TR-86306-03	
Towelettes, 10½" x 10½" (26.7 x 26.7 cm)	Canister of 60	12	TR-86306-05	
Spray bottle	1 quart bottle	12	TR-86306-13	
Refill bottle	1 gallon bottle	4	TR-86306-15	

Bacdown® Hand Soap

Won't dry your skin

- Formulated specifically for those washing frequently to minimize dry, chapped skin
- Protects against gram-negative and gram-positive bacteria as well as yeast and fungi



Packaging	Cat. no.	Price/ea	Cat. no.	Qty/cs	Price/cs
16 oz (500 mL)	TR-86115-02		TR-86115-00	12	
0.26 gal. (1 L)	TR-86115-06		TR-86115-04	12	
1.32 gal. (5 L)	TR-86115-10		—	—	

Proguard® Professional Hand Cream

No greasy residue

- Prevents irritation from latex and other irritants
- Absorbs instantly—does not contain grease, oil, or aloe
- Won't compromise integrity of latex gloves



Packaging	Cat. no.	Price/ea	Cat. no.	Qty/cs	Price/cs
3 oz (88.3 mL)	TR-86115-26		TR-86115-24	12	
16 oz (473 mL)	TR-86115-30		TR-86115-28	6	



**Thermo Scientific™ Nalgene™
Calibrated Graduated Cylinders,
PP and PMP**

**No more guessing—
easy-to-read molded
graduations**

- Get more accurate measurements—calibrated “to contain” and “to deliver”
- Feel confident—meet ASTM Class B, E 1272 specifications and ISO Standard 6706
- Plastic is nonwetting and no meniscus
- Autoclavable



Buy More...Save More!

- 20% off on 120+
- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases

Capacity (mL)	Graduations (mL)	Tolerance (mL)	Polypropylene (PP) cylinders		Polymethylpentene (PMP) cylinders	
			Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
10	0.2	±0.20	TR-06135-10		TR-06134-10	
50	1.0	±0.50	TR-06135-30		TR-06134-30	
100	1.0	±1.00	TR-06135-40		TR-06134-40	
500	5.0	±4.00	TR-06135-60		TR-06134-60	
1000	10.0	±6.00	TR-06135-70		TR-06134-70	
4000	50.0	±29.00	TR-06135-90		TR-06134-90	

**Azlon® Squat-Form
Graduated Cylinders, PP**

**Won't tip over
as easily**

- Get better stability with larger base
- Won't break—translucent PP design with blue graduations
- Eliminate contamination and spill rewetting with self-draining base design
- Autoclavable



Buy More...Save More!

- 20% off on 120+
- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases

Capacity (mL)	Graduations (mL)	Tolerance (mL)	Catalog number	Qty/pk	Price/pk
100	2.0	±2.0	TR-06137-30	5	
250	5.0	±5.0	TR-06137-32	1	
500	10.0	±10.0	TR-06137-34	1	
1000	20.0	±20.0	TR-06137-36	1	
4000	50.0	±50.0	TR-06137-08	1	

**Cole-Parmer®
Graduated
Cylinders, PP and PMP**



**Built to last—
molded graduations
won't wear off**

- For very good chemical resistance, choose polypropylene (PP) version
- Choose transparent polymethylpentene (PMP) for good chemical and heat resistance
- Meet ISO Standard 6706 and calibrated “to contain”
- Autoclavable



Buy More...Save More!

- 20% off on 120+
- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases

Capacity (mL)	Graduations (mL)	Polypropylene (PP) cylinders		Polymethylpentene (PMP) cylinders	
		Cat. no.	Price/pk of 1	Cat. no.	Price/pk of 1
10	0.2	TR-06137-70		TR-06137-50	
25	0.5	TR-06137-72		TR-06137-52	
50	1.0	TR-06137-74		TR-06137-54	
100	1.0	TR-06137-76		TR-06137-56	
250	2.0	TR-06137-78		TR-06137-58	
500	5.0	TR-06137-80		TR-06137-60	
1000	10.0	TR-06137-82		TR-06137-62	
2000	20.0	TR-06137-84		TR-06137-64	

**Cole-Parmer®
Class A Graduated
Glass Cylinders**

**Don't sacrifice
accuracy for price**

- Calibrated “to contain” for accuracy—meet ASTM E1272 Class A tolerances and specifications
- Durable, white enamel graduations
- Withstand temperatures up to 752°F (400°C) for short-term exposure, 445°F (230°C) for longer periods
- Autoclavable



Cole-Parmer®

Capacity (mL)	Graduations (mL)	Tolerance (mL)	Catalog number	Qty/pk	Price/pk
50	1	±0.50	TR-34505-84	1	
100	1	±0.50	TR-34505-86	1	
250	2	±1.0	TR-34505-88	1	
500	5	±2.5	TR-34505-90	1	

Cylinders

Lab Supplies

Showa® Best® N-DEX® Nitrile Gloves

Keep your cool—special formulation for comfort, less fatigue

- Nonlatex—made of soft 100% lightweight nitrile
- Fewer punctures—three times the resistance of rubber or vinyl
- Ambidextrous

Puncture resistant gloves withstand tough conditions



General and Laboratory Grade N-DEX Gloves protect your hands from the environment. Available in low-powder† or powder-free versions.

Industrial Grade N-DEX Plus Gloves are thicker for greater puncture and tear resistance. Gloves provide good resistance to chemicals and abrasion. Ideal for tough lab conditions, assembly, or manufacturing. Available only in low-powder† version.



Compliance: FDA 21 CFR, parts 170-199, acceptable for food and pharmaceutical use.



Size	Length	Thickness	Qty/pk	Catalog number	Price per pack	
					1 pk	10 pk
General and laboratory grade low-powder† N-DEX gloves						
Small				TR-86287-70		
Medium	9½" (24 cm)	4 mil	100	TR-86287-71		
Large				TR-86287-72		
X-large				TR-86287-73		
General and laboratory grade powder-free N-DEX gloves						
Small				TR-86287-80		
Medium	9½" (24 cm)	4 mil	100	TR-86287-81		
Large				TR-86287-82		
X-large				TR-86287-83		
Industrial grade N-DEX Plus low-powder† gloves						
Small				TR-86287-60		
Medium	9½" (24 cm)	8 mil	50	TR-86287-61		
Large				TR-86287-62		
X-large				TR-86287-63		

†USP grade cornstarch

Microflex® FreeForm™ SE Nitrile Gloves

Minimize stress, maximize motion

- Soft feel with textured surface for better grip
- Conform to your hand for better comfort and full range of motion
- Powder-free, ambidextrous



Size	Length	Thickness	Qty/case	Catalog number	Price per case	
FreeForm SE gloves						
Small				TR-86445-20		
Medium	9½" (24 cm)	5.1 mil	1000	TR-86445-21		
Large				TR-86445-22		
X-large				TR-86445-23		
FreeForm SE extended-cuff gloves						
Small				TR-86445-24		
Medium	11½" (29 cm)	6.3 mil	500	TR-86445-25		
Large				TR-86445-26		
X-large				TR-86445-27		

ANSELL TNT™ Blue Disposable Nitrile Gloves

Durable and comfortable

- Static dissipative to eliminate static electricity
- Textured fingertips for better gripping
- Powder-free
- Ambidextrous

Compliance: FDA regulations for food contact.



Size	Length	Thickness	Qty/bx	Catalog number	Price per box	
					1 bx	10 bx
Small				TR-81601-04		
Medium	9½" (24 cm)	5 mil	100	TR-81601-05		
Large				TR-81601-06		
X-large				TR-81601-07		

Cryo-Glove® Cryogenic Gloves

Keep hands from freezing

- Protect as low as -256°F (-160°C)
- Maximum protection while remaining flexible

Water-Resistant Gloves provide protection in closed systems. A stay-dry lining keeps you warm and comfortable. **Waterproof Gloves** have a nylon exterior and a seamless waterproof lining. Gloves keep you dry and wick moisture away from your hands. **Cryo-Industrial® Gloves** feature a rugged, abrasion-resistant outer shell that protects the glove and provides an excellent grip for heavy-duty applications. Waterproof liner protects against cryogenic splashes while the inner lining wicks moisture from your hands for enhanced comfort.

Note: Do not immerse gloves in liquid nitrogen.



Description	Size	Length	Catalog number	Price per pair
Water-resistant Cryo-Glove gloves				
Wrist	Medium	12" (30 cm)	TR-09113-02	
	Large		TR-09113-04	
Mid-arm	Medium	15" (38 cm)	TR-09113-12	
	Large		TR-09113-14	
	X-large		TR-09113-16	
Elbow	Medium	19" (48 cm)	TR-09113-22	
	Large		TR-09113-24	
	X-large		TR-09113-26	
Waterproof Cryo-Glove gloves				
Mid-arm	Medium	15" (38 cm)	TR-09113-30	
	Large		TR-09113-32	
	X-large		TR-09113-34	
Elbow	Medium	19" (48 cm)	TR-09113-35	
	Large		TR-09113-37	
	X-large		TR-09113-39	
Cryo-Industrial heavy-duty gloves				
Mid-arm	Medium	15" (38 cm)	TR-09113-62	
	Large		TR-09113-64	
	X-large		TR-09113-66	



Disposable Transfer Pipettes

Easily draw and deliver solutions

- Deliver repeatable, uniform drops
- Eliminate cross-contamination with these low-cost, disposable LDPE pipettes



“Just what I was looking for.”

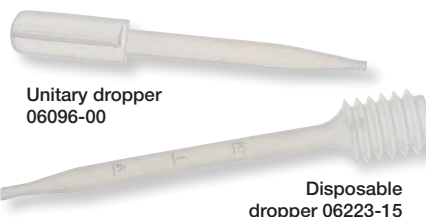
Key	Description	Graduations		Bulb draw	Total capacity	Drops per mL	Length in. (mm)	Qty/pk	Catalog number	Price/pk
		Increments	Maximum							
A	Small bulb, graduated	0.1 mL	0.3 mL	0.8 mL	1.5 mL	21	4 ⁵ / ₈ (117)	500	TR-06226-37	
B	Small bulb, graduated	0.25 mL	1 mL	2.2 mL	3.9 mL	25	5 ¹ / ₂ (140)	500	TR-06226-41	
C	Large capacity, thin stem	—	—	3.3 mL	4.6 mL	25	6 ¹ / ₈ (156)	500	TR-06226-65	
D	Large capacity, fine tip	—	—	3.5 mL	5.8 mL	50	6 ¹ / ₄ (159)	500	TR-06226-67	
E	Large capacity, graduated	0.25 mL	1 mL	3.4 mL	5.8 mL	25	6 ¹ / ₈ (156)	500	TR-06226-61	
F	Large capacity, extra-long stem	—	—	2.3 mL	6.0 mL	25	9 (229)	400	TR-06226-69	
G	Large capacity, graduated	0.5 mL	3.0 mL	3.2 mL	7.5 mL	20	6 ¹ / ₈ (156)	500	TR-06226-63	
H	Jumbo bulb, long stem	—	—	8.0 mL	15.0 mL	19	6 ¹ / ₈ (156)	250	TR-06226-51	

Unitary Droppers, LDPE

No more cleaning dispensers

Thermo Scientific™ Nalgene™ Unitary Dropper is a one-piece molded dropper that delivers 30 to 35 drops per mL. Tube length is 68 mm.

Disposable Droppers are one-piece molded droppers with bellows-action bulbs. Use for infectious or toxic substances.



Unitary dropper
06096-00

Disposable dropper 06223-15

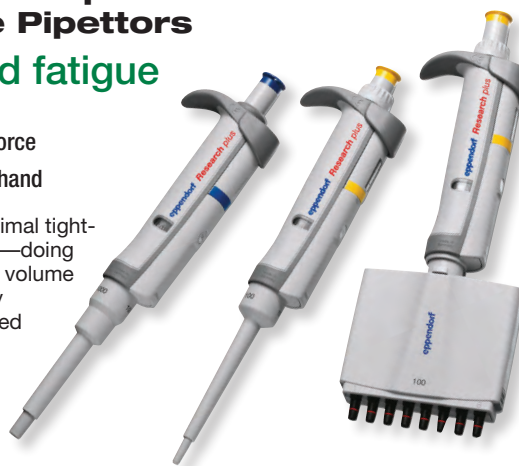
Capacity (mL)	Qty/pk	Catalog number	Price/pk
Nalgene unitary dropper			
1.6	100	TR-06096-00	
Disposable droppers			
1.5	100	TR-06223-15	
5.0	100	TR-06223-25	

Eppendorf® Research® plus Adjustable-Volume Pipettors

Minimize stress and fatigue

- Requires up to 50% less pipetting force
- Designed to fit comfortably in your hand

Spring-loaded tip cone achieves optimal tightness and minimal attachment forces—doing most of the work for you! Make your volume adjustments with just one hand, only a few turns will get you to your desired volume. Four-digit volume display is easy to view. Multichannel pipettors offer channel indicators, in addition to flexibility of removing any of the independent channels—use as many as you need.



Secondary adjustment gives you greater accuracy for specific liquid types. Pipettors are made from Fortron® PPS, which is resistant to acids, alkalis, mildew, bleaches, aging, sunlight, heat, and abrasion. Fully autoclavable for simple decontamination.

Specifications

Calibration: user Tip ejector: yes Autoclavable: yes, fully



Volume	Increments	Accuracy†	Precision†	Control button color	Catalog number	Price
Single-channel pipettors						
0.1 to 2.5 µL	0.002 µL	±1.4%	±0.7%	Dark gray	TR-24505-01	
0.5 to 10 µL	0.01 µL	±1%	±0.4%	Gray	TR-24505-02	
2 to 20 µL	0.02 µL	±1%	±0.3%	Light gray	TR-24505-03	
2 to 20 µL	0.02 µL	±1%	±0.3%	Yellow	TR-24505-04	
10 to 100 µL	0.1 µL	±0.8%	±0.2%	Yellow	TR-24505-05	
20 to 200 µL	0.2 µL	±0.6%	±0.2%	Turquoise	TR-24505-06	
30 to 300 µL	0.2 µL	±0.6%	±0.2%	Orange	TR-24505-07	
100 to 1000 µL	1 µL	±0.6%	±0.2%	Blue	TR-24505-08	
0.5 to 5 mL	5 µL	±0.6%	±0.15%	Violet	TR-24505-09	
1 to 10 mL	10 µL	±0.6%	±0.15%	Turquoise	TR-24505-11	
Eight-channel pipettors						
0.5 to 10 µL	0.01 µL	±2%	±1%	Gray	TR-24505-12	
10 to 100 µL	0.1 µL	±0.6%	±0.3%	Yellow	TR-24505-13	
30 to 300 µL	0.2 µL	±0.8%	±0.3%	Orange	TR-24505-14	
Twelve-channel pipettors (not shown)						
0.5 to 10 µL	0.01 µL	±2%	±1%	Gray	TR-24505-15	
10 to 100 µL	0.1 µL	±0.6%	±0.3%	Yellow	TR-24505-16	
30 to 300 µL	0.2 µL	±0.8%	±0.3%	Orange	TR-24505-17	

†Accuracy and precision values given at maximum volume of pipettor.

Need Help Selecting?

Trust our expert Application Specialists to help you find the right product.

Kim, 12 years of experience

Call: 800-323-4340 E-mail: sales@coleparmer.com

Pipettes & Pipettors

Lab Supplies

Cole-Parmer® Autoclavable Ergonomic Pipettors

Eliminate hand fatigue

- Ergonomic, lightweight design and soft plunger movement
- Fully autoclavable—no disassembly required
- Available in fixed and adjustable-volume styles
- Improved accuracy, precision, and performance

These fully autoclavable pipettors are equipped with a stainless steel piston for improved accuracy, precision, and performance. Two-stage plunger operation provided for last-drop blow-out and reverse pipetting. Separate, streamlined tip ejector designed for access into narrow-neck containers and tubes. Individually calibrated in accordance with DIN 12650 Standards and supplied with a computer-generated calibration report and calibration tool. Nozzle accepts Cole-Parmer and universal tips.



Specifications

Wetted materials: polypropylene Tip ejector: yes Autoclavable: yes

Volume (mL)	Increments (mL)	Accuracy	Reproducibility	Catalog number	Price
Fixed-volume pipettors					
100	—	±0.3%	≤0.2%	TR-21600-50	
200				TR-21600-52	
500				TR-21600-54	
1000				TR-21600-56	
5000				TR-21600-58	
Adjustable-volume pipettors					
0.1 to 10	0.1	±5.0% to ±1.0%	≤2.8% to ≤0.4%	TR-21600-60	
2.0 to 20	0.1	±5.0% to ±1.0%	≤1.5% to ≤0.3%	TR-21600-62	
5.0 to 50	1	±2.5% to ±0.7%	≤1.5% to ≤0.3%	TR-21600-64	
10 to 100	1	±2.0% to ±0.8%	≤0.7% to ≤0.2%	TR-21600-66	
20 to 200	1.0	±1.5% to ±0.6%	≤0.3% to ≤0.2%	TR-21600-68	
100 to 1000	10.0	±1.3% to ±0.5%	≤0.3% to ≤0.2%	TR-21600-70	
500 to 5000	100.0	±0.8% to ±0.6%	≤0.2% to ≤0.2%	TR-21600-72	
1000 to 10,000	100.0	±1.2% to ±0.6%	≤0.2% to ≤0.2%	TR-21600-74	

Tips

Volume (µL)	Qty/pk	Catalog number	Price/pk
0.2 to 10	1000	TR-25711-06	
0 to 200	1000	TR-25711-12	
	960	TR-25711-14	
500 to 1000	1000	TR-18889-08	
1000 to 5000	1000	TR-25711-70	
	500	TR-25711-71	
	250	TR-25711-72	

Pipettes & Pipettors

Lab Supplies

Cole-Parmer® Single-Channel Pipettors

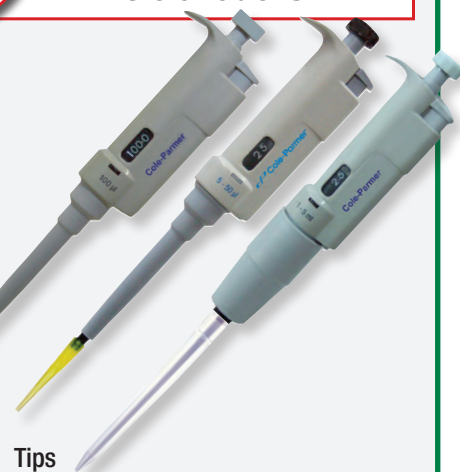
Don't sacrifice performance for price

- Ergonomic, lightweight design with soft plunger movement minimizes hand fatigue

Pipettors feature streamlined, low-pressure tip ejector for easy access to narrow containers. They facilitate last drop dispensing and reverse pipetting technique with two-stage plunger operation for blow-out. Easy to calibrate and disassemble for routine servicing or autoclaving. Adjustable-volume pipettors feature quick, easy click-stop, digital volume settings. Individually calibrated in accordance with DIN 12650 Standards and supplied with a computer-generated calibration document supplied by the manufacturer and calibration tool.



“Great for everyday micro dilutions”



Specifications

Tip ejector: tip ejector with blow-out step
Autoclavable: autoclavable tip cone and lower section assembly

Volume	Increments	Accuracy	Reproducibility	Catalog number	Price
Fixed-volume pipettors					
100 µL	—	±0.3%	±0.2%	TR-21600-00	
200 µL	—			TR-21600-02	
500 µL	—			TR-21600-04	
1000 µL	—			TR-21600-06	
5000 µL	—			TR-21600-08	
Adjustable-volume pipettors					
0.1 to 10 µL	0.1 µL	±2.5%	1.33%	TR-21600-10	
5 to 50 µL	1.0 µL	±1.3%	0.7%	TR-21600-12	
20 to 100 µL	1.0 µL	±1.1%	0.4%	TR-21600-14	
40 to 200 µL	1.0 µL	±0.9%	0.3%	TR-21600-16	
200 to 1000 µL	10.0 µL	±0.8%	0.2%	TR-21600-18	
1 to 5 mL	100.0 µL	±0.6%	0.2%	TR-21600-20	

Tips

Volume (µL)	Qty/pk	Catalog number	Price/pk
0.2 to 10	1000	TR-25711-06	
0 to 200	1000	TR-25711-12	
	960	TR-25711-14	
500 to 1000	1000	TR-18889-08	
1000 to 5000	1000	TR-25711-70	
	500	TR-25711-71	
	250	TR-25711-72	



Modular Drying Racks, 304 SS

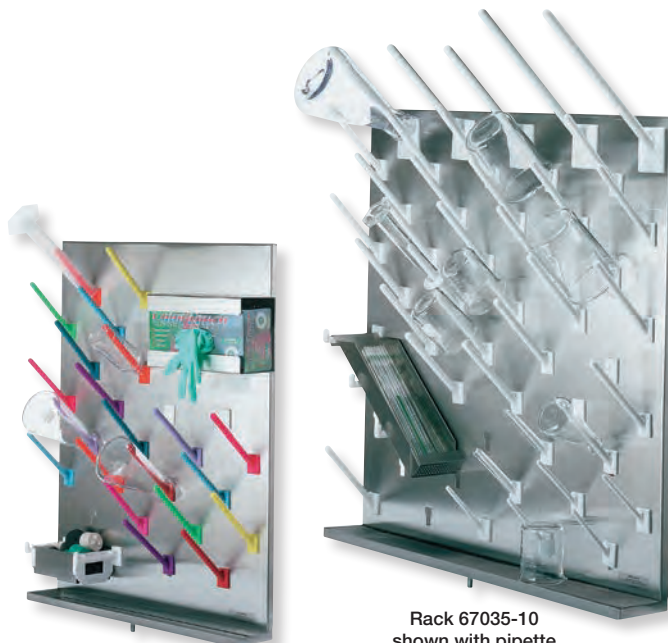
Customizable to your needs in seconds

- Easy-to-clean, corrosion-resistant stainless steel racks and polypropylene (PP) pegs
- No mess—catch drain directs drainage to drip trough
- Autoclavable
- Include 6"L pegs, SS drain tube, and wall-mounting bracket



Color of pegs (included)	Catalog number	Price/ea
32-peg racks measure 24"W x 30"H x 4"D (61 x 76.2 x 10.2 cm)		
White	TR-67035-00	
Assorted†	TR-67035-02	
50-peg racks measure 30"W x 30"H x 4"D (76.2 x 76.2 x 10.2 cm)		
White	TR-67035-10	
Assorted†	TR-67035-12	
Black	TR-67035-14	
60-peg racks measure 36"W x 30"H x 4"D (91.4 x 76.2 x 10.2 cm)		
White	TR-67035-20	
Assorted†	TR-67035-22	
Black	TR-67035-24	

†Assorted peg colors include yellow, orange, pink, red, green, light blue, dark blue, lilac, and purple.



Rack 67035-02 shown with drain basket and glove dispenser

Rack 67035-10 shown with pipette rack and screen insert

Add-On Accessories, 304 SS

These accessories include the necessary “snap-in” support pegs to quickly and easily attach to the rack. **Drain basket** holds small items such as stir bars, stoppers, and pipette tips. **Drain shelf** is ideal for drying and storing various glassware items. **Pipette rack** hangs at an angle to allow for complete drainage of pipettes. **Funnel rack** holds four funnels, volumetric flasks, or small cylinders. **Cylinder yoke** holds two cylinders. **Flask holder** accepts one large flask, cylinder, or separatory funnel. **Glove dispenser** provides a convenient spot for one box of gloves. **Screen inserts** fit into the drip trough and increase the drying capacity of the rack.

Description	Catalog number	Price/ea
Drain basket, 6"W x 2½"H (15.2 x 6.4 cm)	TR-67035-70	
Drain shelf, 14"W (35.6 cm)	TR-67035-71	
Pipette rack, 12½"L (31.8 cm)	TR-67035-72	
Funnel rack, 14"W (35.6 cm)	TR-67035-73	
Cylinder yoke, 14"W (35.6 cm)	TR-67035-74	
Flask holder, 8"W (20.3 cm)	TR-67035-75	
Glove dispenser, 10"W x 5¼"H (25.4 x 14.6 cm)	TR-67035-76	
Screen insert, 24"W (61 cm)	TR-67035-77	
Screen insert, 30"W (76.2 cm)	TR-67035-78	
Screen insert, 36"W (91.4 cm)	TR-67035-80	

Plugs and Pegs, Molded Polypropylene

Removable “snap-in” plugs and pegs come in packs of six.

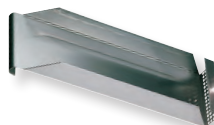
Description	Catalog number	Price/pk
White hole plugs	TR-67035-79	
White tube pegs, 4"L x 5/16" dia (10.2 x 0.8 cm)	TR-67035-90	
White long pegs, 9"L x 5/8" dia (22.9 x 1.6 cm)	TR-67035-91	
White long pegs, 12"L x 5/8" dia (30.5 x 1.6 cm)	TR-67035-92	



Drain basket 67035-70



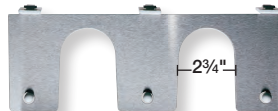
Drain shelf 67035-71



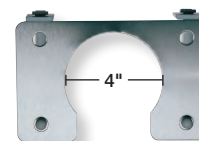
Pipette rack 67035-72



Funnel rack 67035-73



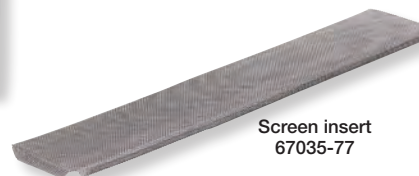
Cylinder yoke 67035-74



Flask holder 67035-75



Glove dispenser 67035-76



Screen insert 67035-77

Racks

Lab Supplies

Scienceware® Sterile Sampling Scoops, PS

No need to presterilize

- Come sterilized in individual polyethylene bags
- Ideal for single use



STERILE

Capacity mL (oz)	Scoop (L x W)		Handle length		Catalog number	Qty/ cs	Price/ cs
	in.	cm	in.	cm			
60 (2)	3 x 1	7.6 x 2.5	4	10.2	TR-06260-10	100	
120 (4)	3½ x 1	8.9 x 2.5			TR-06260-20		

Scienceware® Lab Spoon/Spatula, 304 SS

Easier sampling from large containers

- Total length of 12" (31 cm)



Buy More...Save More!
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Spoon capacity	Spoon end	Spatula end	Catalog number	Qty/ pk	Price/ pk
5 mL (0.18 oz)	1½" (3.8 cm) W	1¾" (3 cm) W	TR-01019-14	1	

Lab Spatulas, Nickel/Stainless Steel

Get precise sampling of powders or salts

- Easy-to-clean finish
- Choose the right end style for your needs



A B C D E F G H

Buy More...Save More!
20% off on 120+
15% off on 30 to 119
10% off on 6 to 29 packs or cases

End styles	Overall length		Qty/ pk	Catalog number	Price/ pk
	in.	cm			
A. Spooned/flat	5¾	14.6	3	TR-06369-09†	
B. V-shaped/sharpened bent tip	6¼	15.9	3	TR-06369-08	
C. Spooned/plastisol handle	6½	16.5	3	TR-06369-03†	
D. Tapered/rounded	8	20.3	3	TR-06369-06	
E. Rounded/rounded	8¼	21.0	3	TR-06369-05	
F. Tapered/rounded	7½	18.1	3	TR-06369-07	
G. Squared/rounded	7½	19.1	3	TR-06369-18	
H. Spooned/squared	8½	22.5	3	TR-06369-16	

†Hayman type end

Smart Spatula™ Disposable Spatulas, PP

Reduce cross-contamination

- Each spatula has scoop and spatula ends for better sampling
- Flexible design will not shatter even if exposed to liquid nitrogen
- Autoclavable



STERILE

Description	Overall length		Catalog number	Qty/pk	Price/pk
	in.	cm			
A. Blue	8¾	22.2	TR-06265-18	300	
B. Opaque	8¾	22.2	TR-06265-12	300	
C. Opaque, antistatic	5½	14.0	TR-06265-14	300	
D. Green, large	12¼	31.1	TR-06265-16	150	
E. Opaque, sterile	8¾	22.2	TR-06265-20	100	

Scienceware® Sterile Sampling Spatula, PS

Get more volume per scoop

- Designed to hold twice the volume of standard spatulas
- Break up caked material easily with sturdy edge
- Individually sterilized and bagged



STERILE

Overall length	Catalog number	Qty/cs	Price/cs
9" (22.9 cm)	TR-06262-00	100	

Cole-Parmer® Double-Ended Spoon Set, 304 SS

Sample from both ends

- Minimize discomfort—solid rounded shafts for more comfortable handling

Set contains three spoons: a 5¾" (14.9 cm) long spoon with 0.5 mL and 2.0 mL bowls, an 8¼" (21 cm) long spoon with 1.6 mL and 5.0 mL bowls, and an 11½" (30.2 cm) long spoon with 2.0 mL and 8.0 mL bowls.

Set contains three spoon sizes



Cole-Parmer®

Buy More...Save More!

20% off on 120+
15% off on 30 to 119
10% off on 6 to 29 packs or cases

Qty/set	Catalog number	Price/set*
Three spoons	TR-06261-00	

*One set qualifies as one pack for discount savings.



Cole-Parmer® Jiffy-Jack® Lab Jacks

Safely position sample or equipment

- Easily position equipment or sample with a twist of the knob
- Rugged construction stands up to heavy loads
- Add optional support rod for probes, clamps, or other items

Top plate dimensions	Open height	Closed height	Max support static load	Catalog number	Price
Plastic lab jack					
8" x 8" (20.3 x 20.3 cm)	12" (30.5 cm)	3" (7.6 cm)	15 lb (6 kg)	TR-08055-50	
Aluminum lab jacks					
4" x 4" (10.2 x 10.2 cm)	5" (12.7 cm)	2½" (6.4 cm)	66 lb (30 kg)	TR-08057-10	
6" x 6" (15.2 x 15.2 cm)	9¾" (24.8 cm)	3" (7.6 cm)	132 lb (60 kg)	TR-08057-20	
8" x 8" (20.3 x 20.3 cm)	13" (33.0 cm)	3½" (8.9 cm)	176 lb (80 kg)	TR-08057-30	
10" x 10" (25.4 x 25.4 cm)	13" (33.0 cm)	3½" (8.9 cm)	198 lb (90 kg)	TR-08057-40	
Stainless steel heavy-duty lab jacks					
3" x 3" (7.6 x 7.6 cm)	5" (12.7 cm)	2½" (6.4 cm)	20 lb (9.0 kg)	TR-08057-12	
4" x 4" (10.2 x 10.2 cm)	5" (12.7 cm)	2½" (6.4 cm)	30 lb (13.6 kg)	TR-08057-14	
6" x 6" (15.2 x 15.2 cm)	9¾" (24.8 cm)	3" (7.6 cm)	35 lb (15.8 kg)	TR-08057-16	
8" x 8" (20.3 x 20.3 cm)	13" (33.0 cm)	3½" (8.9 cm)	55 lb (25.0 kg)	TR-08057-18	
10" x 10" (25.4 x 25.4 cm)	13" (33.0 cm)	3½" (8.9 cm)	80 lb (36.3 kg)	TR-08057-22	
12" x 12" (30.5 x 30.5 cm)	19½" (49.5 cm)	4" (10.2 cm)	150 lb (68.0 kg)	TR-08057-24	
16" x 16" (40.6 x 40.6 cm)	19½" (49.5 cm)	4" (10.2 cm)	180 lb (81.6 kg)	TR-08057-26	

Accessories

[TR-08057-50](#) Ratchet tool adds extra leverage to models 08057-24 and -26

[TR-08057-52](#) Support rod kit allows you to mount a 17" (43.2 cm) L vertical support rod to models 08057-16, -18, -22, -24, and -26

★★★★★
"Just as I remember,
and better."



Model 08057-20 supports up to 132 lb (60 kg).

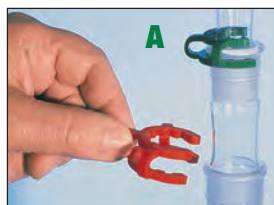
Supports & Clamps

Keck® Connectors, Clamps, and Clips

Keep connections together

A. Keck Original Standard Taper Clips

Economical standard taper clips securely hold conical joints under pressure without damaging glass. The polyoxymethylene (POM) acetal resin clips are safe to 302°F (150°C). Resistant to concentrated alkalis and dilute acids (not resistant to halogen gases and concentrated acids).



Plastic taper clips are easy to attach and remove.

Joint size no.	Color	Qty/pk	Catalog number	Price/pk
10	Green	12	TR-06839-90	
12	Violet		TR-06839-95	
14	Yellow		TR-06840-05	
19	Blue	12	TR-06840-10	
24	Green		TR-06840-15	
29	Red		TR-06840-20	
34	Orange	12	TR-06840-25	
40	Yellow		TR-06840-30	
45	Brown		TR-06840-35	

[TR-06840-00](#) Standard taper clip assortment pack. Six each of sizes 14, 19, 24, and 29 (24 total)

[TR-06840-50](#) Standard taper clip assortment pack. Three each of all nine sizes in table above (27 total)

Find even more online!
Go to ColeParmer.com to see full product details.

B. Keck Metal Standard Taper Clips

Durable nickel-plated steel taper clips securely hold conical joints under pressure. Clips offer superior chemical and temperature resistance—withstanding temperatures to 932°F (500°C).



Joint size no.	Qty/pk	Cat. no.	Price/pk
14	6	TR-06836-05	
19		TR-06836-10	
24		TR-06836-15	
29		TR-06836-20	

C. Keck Ball-Joint Clips

Secure ball and socket joints—no locking screw required. Polyoxymethylene (POM) acetal resin clips are safe to 302°F (150°C). Resistant to concentrated alkalis and dilute acids (not resistant to halogen gases or concentrated acids).



Joint size no.	Color	Qty/pk	Catalog number	Price/pk
13	Violet	12	TR-06838-10	
19	Blue		TR-06838-15	
29	Red		TR-06838-20	
35	Orange		TR-06838-25	

Lab Supplies

Hamilton Standard Microliter® Syringes

Provide precise liquid delivery—from 10 to 500 µL

Syringes with Cemented and Removable needles include a 304 stainless steel needle with a noncoring beveled tip—ideal for septum penetration in all chromatographic techniques. If you use large numbers of syringes, choose one of our convenient “economy packs” containing six 10-µL syringes with cemented or removable needles. Each pack is in a protective storage container and includes a set of adhesive-backed numbers for syringe identification.

Syringes with Luer Tip Connections do not include a needle; order needles separately; see ColeParmer.com.



Syringes		Needles		Catalog number	Price/ea	Economy packs	
Capacity	Type	Gauge†	Tip type			Catalog number	Price/pk of 6
10 µL	Cemented needle	26s	Noncoring beveled	TR-07938-00		TR-07938-30	
	Removable needle			TR-07938-10		TR-07938-40	
25 µL	Cemented needle	22s	Noncoring beveled	TR-07938-01		—	
	Removable needle			TR-07938-11		—	
	Luer tip†			TR-07938-21		—	
50 µL	Cemented needle	22s	Noncoring beveled	TR-07938-02		—	
	Removable needle			TR-07938-12		—	
	Luer tip†			TR-07938-22		—	
100 µL	Cemented needle	22s	Noncoring beveled	TR-07938-03		—	
	Removable needle			TR-07938-13		—	
	Luer tip†			TR-07938-23		—	
250 µL	Cemented needle	22s	Noncoring beveled	TR-07938-04		—	
	Removable needle			TR-07938-14		—	
	Luer tip†			TR-07938-24		—	
500 µL	Cemented needle	22s	Noncoring beveled	TR-07938-05		—	
	Removable needle			TR-07938-15		—	
	Luer tip†			TR-07938-25		—	

†Luer tip syringes do not include a needle; order separately.

‡An “s” denotes “small bore”—reduces dead volume and provides impedance to improve transfer accuracy.

Syringes

BD™ Disposable Syringes

Luer-Lok™ tips allow for easy connection of syringe filters

Use these latex-free, disposable polycarbonate syringes for your general-purpose applications. Available in either Luer-Lok or slip-tip versions. Autoclavable.



Lab Supplies

Capacity	Graduations	Type	Qty	Catalog number	Price
Sterilized syringes, individually wrapped					
1 mL	1/100 mL	Luer-Lok	100/bx	TR-07940-00	
3 mL	1/10 mL	Luer-Lok	200/bx	TR-07940-02	
		Slip tip		TR-07940-04	
5 mL	1/5 mL	Luer-Lok	100/bx	TR-07940-06	
		Slip tip	125/bx	TR-07940-08	
10 mL	1/5 mL	Luer-Lok	100/bx	TR-07940-12	
		Slip tip		TR-07940-14	
60 mL	1 mL, 2 oz in 1/4 oz	Luer-Lok	40/bx	TR-07940-30	
		Slip tip		TR-07940-28	
Nonsterilized syringes					
1 mL	1/100 mL	Slip tip	100/pk	TR-07944-00	
3 mL	1/10 mL	Luer-Lok	100/pk	TR-07944-02	
		Slip tip		TR-07944-04	
5 mL	1/5 mL	Luer-Lok	100/pk	TR-07944-06	
		Slip tip		TR-07944-08	
10 mL	1/5 mL	Luer-Lok	50/pk	TR-07944-12	
		Slip tip		TR-07944-14	
20 mL	1 mL, 3/4 oz in 1/8 oz	Luer-Lok	25/pk	TR-07944-16	
		Slip tip		TR-07944-18	

Capacity	Graduations	Type	Qty	Catalog number	Price
Nonsterilized syringes (cont.)					
30 mL	1 mL, 1 oz in 1/8 oz	Luer-Lok	25/pk	TR-07944-24	
		Slip tip		TR-07944-22	
60 mL	1 mL, 2 oz in 1/4 oz	Luer-Lok	25/pk	TR-07944-28	
		Slip tip		TR-07944-30	
Nonsterilized syringes, bulk pack					
1 mL	1/100 mL	Slip tip	3000/cs	TR-07945-00	
3 mL	1/10 mL	Luer-Lok	1600/cs	TR-07945-02	
		Slip tip		TR-07945-04	
5 mL	1/5 mL	Luer-Lok	1400/cs	TR-07945-06	
		Slip tip		TR-07945-08	
10 mL	1/5 mL	Luer-Lok	850/cs	TR-07945-12	
		Slip tip		TR-07945-14	
20 mL	1 mL, 3/4 oz in 1/8 oz	Luer-Lok	325/cs	TR-07945-16	
		Slip tip		TR-07945-18	
30 mL	1 mL, 1 oz in 1/8 oz	Luer-Lok	225/cs	TR-07945-24	
		Slip tip		TR-07945-22	
60 mL	1 mL, 2 oz in 1/4 oz	Luer-Lok	125/cs	TR-07945-28	
		Slip tip		TR-07945-30	

Warning—These products are not approved or intended for, and should not be used for, medical, clinical, surgical or other patient oriented applications.



General-Purpose Tweezers and Forceps, Stainless Steel (SS) and Plastic

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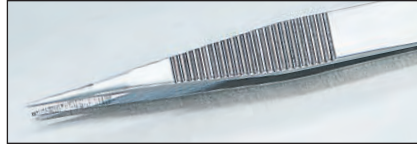
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SS Tweezers,
straight tips and finger serrations.



Length	Catalog number	Qty/ pk	Price/pk
7"	TR-07288-04	12	

SS Straight: Thick, Flat Strong Tips,
serrated tips and grips. Style OOD.



Length	Catalog number	Qty/ pk	Price/pk
4¾"	TR-07287-03	1	

SS Self-Locking Tweezers,
straight narrow tips.



Length	Catalog number	Qty/ pk	Price/pk
4¼"	TR-07288-01	12	

SS Tweezers,
smooth spade tips.



Length	Catalog number	Qty/ pk	Price/pk
4¼"	TR-07288-07	12	

SS Solder Utility Tweezers,
curved tips and finger serrations.



Length	Catalog number	Qty/ pk	Price/pk
7"	TR-07288-03	12	

SS Tweezers,
curved serrated tips.



Length	Catalog number	Qty/ pk	Price/pk
4¼"	TR-07288-05	12	

SS Forceps,
straight serrated tips.



Length	Catalog number	Qty/ pk	Price/pk
6"	TR-07288-12	1	
12"	TR-07288-14	1	

SS Forceps,
plastic-coated rounded tips.



Length	Catalog number	Qty/ pk	Price/pk
12"	TR-07288-10	1	

PTFE-Covered Nickel-Plated Forged Steel Forceps are heat and chemical resistant. **Autoclavable.**



Length	Catalog number	Qty/ pk	Price/pk*
4¼"	TR-06440-00	2	

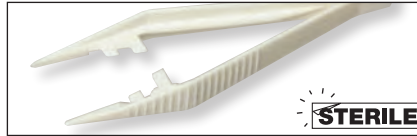
*Quantity discount does not apply.

Reinforced Nylon Forceps have corrugated handles, serrated blades, and rounded tips. **Autoclavable.** Sterile—individually wrapped.



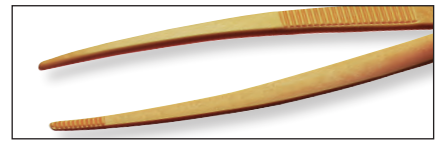
Sterile	Length	Catalog number	Qty/ pk	Price/pk
No	4⅞"	TR-06443-15	100	
Yes	4⅞"	TR-06443-26	100	

Nylon Forceps feature corrugated handles and serrated blades. **Autoclavable.** Sterile—individually wrapped.



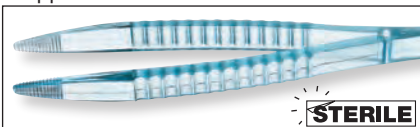
Sterile	Length	Catalog number	Qty/ pk	Price/pk
No	4¼"	TR-06443-25	100	
Yes	4¼"	TR-06443-27	70	

PA (Polyamide) Tweezers,
rounded tips.



Length	Catalog number	Qty/ pk	Price/pk
7"	TR-06446-20	1	

Polystyrene Disposable Sterile Forceps feature corrugated handles and rounded serrated tips. Sterile—come individually wrapped.



Length	Catalog number	Qty/ pk	Price/pk*
4⅞"	TR-06443-20	100	

*Quantity discount does not apply.

Plastic Curved: Smooth Rounded Tips 2AB



Length	Catalog number	Qty/ pk	Price/pk
4½"	TR-07290-06	12	

Plastic Curved: Very Fine and Smooth Tips 7-STD



Length	Catalog number	Qty/ pk	Price/pk
4½"	TR-07290-08	12	

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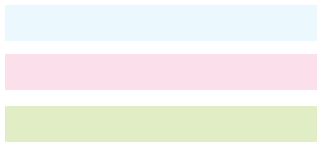


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