

Premium Laboratory Equipment

Shakers, Mixers & Peristaltic Pumps

Robust acrobats



Don't Compromise

Heidolph Premium Laboratory Equipment stands for reliability, precision, and efficiency. Your demand drives us to provide the fastest service, individual support, and quality without compromise. This allows you to focus purely on your research, your company, and the millions of people worldwide.
In short: research made easy.

For us, "Made in Germany" is far more than just a marketing strategy. It is part of our company philosophy.

Our location in Germany allows us to develop and produce reliable laboratory equipment with an average operational lifespan of 10 years or more. For you, this means that every purchase is an investment in the future.

All Heidolph products are developed and manufactured at our Schwabach headquarters in Nuremberg, where they undergo multi-stage quality checks in development and production. Even in continuous operation, our powerful, no-maintenance motors ensure consistent results and prevent downtimes and expensive repairs.

To us, premium service means cost-free installation and training, the shortest possible repair and delivery times and individual expert advice – simply "research made easy".

MADE IN GERMANY

3-year warranty on all devices
and an average operational
lifespan of **10 years**

Multi-stage quality checks in
development and production

Premium service according to the
"research made easy" principle

Free product-demo!

You can thoroughly test our devices
with a non-binding and free demo to
ensure that our products meet all
your requirements.

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Hei-MIX Shakers and Mixers Always in Motion

Suspending in a flash, homogeneously emulsifying, gently mixing or incubated shaking – the right solution for any requirement. The Hei-MIX series offers numerous options with different types of movement, loading capacities and versatile accessories for shaking and mixing.



Leading Safety Standards

- The top plate of all platform shakers is equipped with rubber mats, thereby providing the vessels with a secure grip
- For guaranteed safety during unattended continuous operation, all devices have an integrated overheating protection, which switches the device off in an emergency
- In order to categorically rule out any accidents, all devices have a low center of gravity and do not start to slide even on a damp work surface
- The temperature-insulated drive prevents heating of the platform and thus damage to thermolabile samples
- Large range of accessories with attachments for all common vessels – eliminating the need for decanting





Superior Ease of Use

- Versatile working with many different types of movements and vessel sizes: A wide range – from vortexer to large platform shaker – offers customized solutions
- In addition, an extensive range of accessories and numerous attachments for all common vessels are available to choose from
- With six different types of movement – from one- to three-dimensional – the right solution is available for every application
- For special applications, many types of movement can be selected in addition to the desired amplitude or tilt angle
- Three different loading capacities are available to choose from: compact 2-kg models, 5-kg incubator-compatible models or 10-kg models for highest sample throughput
- The clearly arranged control panel is self-explanatory and makes everyday use easier
- No compromise: The wide range of shaking and mixing devices in combination with the matching accessories offers the right solution for every application



Reduced Cost of Ownership

- A worthwhile investment: All products have maintenance- and spark-free motors and are excellently suited for years of continuous use
- The sealed housing reliably protects against corrosion and, on average, increases the operational lifespan to more than 10 years while simultaneously reducing maintenance and repair costs
- The modular concept Incubator 1000 for simultaneous mixing, shaking and temperature control increases the sample throughput and simultaneously reduces process times

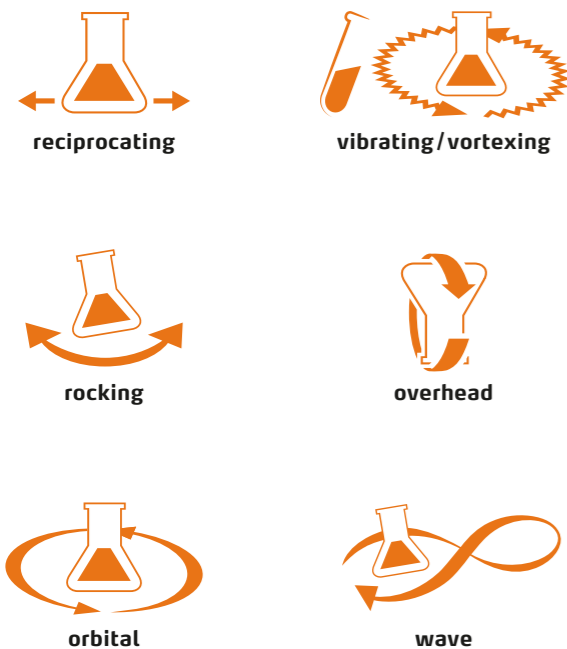


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All Benefits at a Glance

Absolutely Versatile

The overall concept for successful research offers countless individual solutions due to its combination possibilities.



Six different shaking motions – from one- to three-dimensional. Individual movements in addition vary in their motion amplitudes and tilt angles.



Incubator 1000 – the modular incubation system for platform shakers

- The temperature of the individual application can be controlled simultaneously
- Making effective use of valuable laboratory space: The modular concept requires significantly less space than any other comparable system
- The platform shaker can be integrated into a reasonably priced incubation system in no time at all – more on page 26
- No matter how large the vessels are – three different incubation hoods leave all options open for maximum flexibility

Absolutely versatile: With the wide range of shaking and mixing devices and combination possibilities with the matching accessories there is the right solution for every application.

3-year warranty on all devices and an average operational lifespan of more than 10 years

Multifarious Possibilities

Incubating with access in a matter of seconds: The hinged incubator hood remains in any position without locking device

With different shaking motions, tilt angles, motion amplitudes and three different loading capacities, the right product is available even for unusual applications



Full visual reaction control through the transparent PETG incubation hood, which does not allow condensation to form

As a result of the low center of gravity, the shakers do not start to slide even on a damp work surface

For applications in microbiology: A temperature-insulated drive prevents heating of the platform and thus damage to thermolabile samples

All models are equipped with overheating protection, which switches off the device in an emergency – important for temporally unrestricted continuous operation.

Overhead Shakers – for small to large tasks

Workhorses for various vessels and volumes – from applications in biochemistry to water and sediment analyses according to DIN 38414-4.

Overhead

With quick-clamping system for easily swapping and using different vessels.



Reax 20 for 4, 8 or 12 bottles

Meets the specifications according to DIN 38414-4. Also suitable for mixing cylinders or wide mouth bottles up to a height of 270 mm and a diameter of max. 136 mm.

Reax 2

Fully flexible loading with the universal adapter for 50 to 160 mm high vessels or the adapter for 20 test tubes. Loading capacity 1 kg.

Test Tube Shakers – fast and powerful

Vortexers are ideal for lightning-fast mixing. Whether in test tubes, centrifuge tubes or comparable vessels, even with different diameters and tubes. The strong shaking motion guarantees excellent mixing results without exception.

Vibrating/Vortexing

Fast, even distribution, even with solids and highly viscous media – ideally suited for short- or long-term operation.



Reax top/Reax control

The standard or precision model

The shaking orbit of 5 mm reliably and quickly achieves an even distribution. Reax control with electronic speed control – the speed remains constant even in the low range and at load changes.

Multi Reax

The all-rounder

Processing several samples simultaneously, with attachments for 12 or 26 vessels.

Platform Shakers – multifunctional and all-purpose

The large range of platform shakers offers the right solution for any vessel and application – whether powerful and fast or quiet and gentle. Even for highly sensitive samples, such as in cell research: The temperature-insulated drive prevents heating of the platform and thus thermal damage to the sample.

The platform shakers can be individually configured with the versatile accessories for various applications and vessels and the modular Incubator 1000 concept.

Vibrating

From powerful to gentle, even for liquid samples with suspended solids: achieve the best mixing results thanks to different amplitudes and load capacities.



Orbital

The slow and even orbital movement of the Rotamax and Unimax models keeps your samples in continuous motion.



Rocking

The tilting motion provides excellent results, whether staining, washing or cell culture.



Titramax 100/101/1000

Compact and powerful

First-class mixing results in microtiter plates from gentle to intensive – even with samples with solid content.

Vibramax 100/110

For gentle to vigorous mixing

Various possibilities through combination with tension rollers, holding clamps or the attachment for up to 49 test tubes.

Rotamax 120

The compact one

Best results even when space is limited with the compact 20 mm orbital shaker.

Unimax 1010/2010

Ideally suited for Erlenmeyer flasks

Additional temperature control with model 1010 by means of Incubator 1000 or a high loading capacity up to 10 kg with the Unimax 2010.

Duomax 1030

The versatile one

Two different tilt angles to choose from and compatible with Incubator 1000 for gentle temperature control.

Platform Shakers – strong and customizable

Specialists are required for applications such as phase separation or staining of electrophoresis gels: temperature-controlled, high loading capacity, two different tilt angles and attachments for applications with separatory funnels, Erlenmeyer flasks, bottles or gel staining trays.

Reciprocating

For the correct shaking intensity during phase separation: the Promax models are perfect for use with separatory funnels.



Wave

Three-dimensional movement and two tilt angles for best results, such as when staining electrophoretic gels.



Promax 1020

The one with temperature-control

Compatible with Incubator 1000 for temperature control. With 32 mm stroke ideally suited for separatory funnels.

Promax 2020

The resilient one

Large model with 10 kg loading capacity and 20 mm stroke for larger quantities.

Polymax 1040

The one with temperature control

Models with 5° or 10° tilt angle for a gentle or more vigorous motion amplitude – compatible with Incubator 1000.

Polymax 2040

The spacious one

Large model with a useful area of 39×34 cm for increased sample throughput and stepless speed control.

Overhead Shakers

Reax

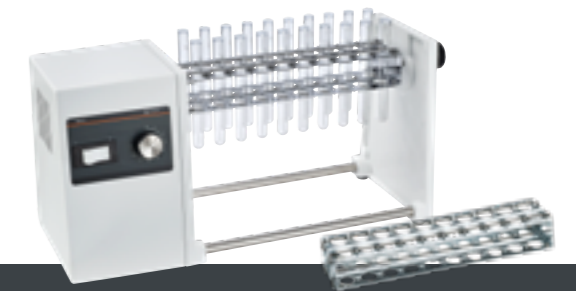
For small to very large tasks

With quick-release technology for easy change and use of a wide range of vessels: from analyses to incubation.



Accessories see page 38

Model			P/N
Reax 2			541-21009-00
Reax 20/4	for up to 4 bottles	1–16 rpm	541-20004-00
Reax 20/8	for up to 8 bottles	1–16 rpm	541-20008-00
Reax 20/12	for up to 12 bottles	1–16 rpm	541-20012-00
Reax 20/4	for up to 4 bottles	2–32 rpm	541-20004-01
Reax 20/8	for up to 8 bottles	2–32 rpm	541-20008-03
Reax 20/12	for up to 12 bottles	2–32 rpm	541-20012-02



Reax 2

- Fully flexible loading with the universal adapter for 50 to 160 mm high vessels or the optional adapter for 20 test tubes. Loading weight 1 kg
- Individually and steplessly adjustable speed from 20 to 100 rpm



Reax 20 for 4, 8 or 12 bottles

- Also for mixing cylinders or wide mouth bottles with a height between 160 to 270 mm and max. 136 mm diameter
- With individually and steplessly adjustable speed from 1 to 16 rpm or 2 to 32 rpm and in different sizes for 4, 8 or 12 bottles simultaneously

Test Tube Shakers / Vortexer

Reax top

Vortexer – the standard model

Fast, even distribution, even with solids and highly viscous media – ideally suited for short-term operation.

- For short-term operation: In this mode, the shaking motion is triggered by pressure on the test tube tray
- The shaking orbit of 5 mm reliably and quickly achieves an even distribution
- The continuous operation mode guarantees a permanent shaking motion
- Fastest mixing due to the high speed of 2,500 rpm
- A test tube tray for tubes with up to 20 mm Ø is already included in the scope of delivery. Optional test tube trays for vessels with up to 50 mm Ø expand the area of application



Reax control

Properties such as Reax top, supplemented by:

- Scale for setting an accurate target speed between 0–2,500 rpm
- Electronic speed control for improved results, even in the low range. The speed remains constant even in the event of a load change

Model	P/N
Reax top	541-10000-00
Reax control	541-11000-00

Accessories see page 34

Multi Reax

Vortexer – the all-rounder

- Scope of delivery with two holding devices: An attachment for 12 vessels/sample vessels with a diameter of 16 to 32 mm each and one for 26 vessels with a diameter of 10 to 16 mm each
- Excellent mixing results are achieved with the 3 mm shaking orbit, even with large samples with solid content
- Stepless speed adjustment from 150 to 2,000 rpm on the digital display
- Timer function up to 999 minutes for an automatic termination of the shaking function



Shaking up to 26 samples simultaneously and achieving excellent mixing results.



Model	P/N
Multi Reax	545-10000-00

Platform Shakers

Vibramax

For gentle to vigorous mixing

Vibramax 100

- The space-saving model with a loading capacity of 2 kg is ideally suited for vessels of all kinds
- Excellent mixing results are achieved with the 3 mm shaking orbit, even with large samples with solid content
- The speed can be adjusted individually and steplessly from 150 to 1,350 rpm – for gentle to vigorous mixing
- A versatile range of attachments and tension rollers provides countless combination options
- The timer function for up to 120 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds



Various possibilities through combination with tension rollers and holding clamps as well as optional test tube attachments with up to 49 samples simultaneously.



Vibramax 110

- With a shaking orbit of 1.5 mm for gentle mixing
- The speed can be adjusted individually and steplessly from 150 to 2,500 rpm
- Timer function as with Vibramax 100

Model	P/N
Vibramax 100	544-21200-00
Vibramax 110	544-31200-00

Accessories see page 35

Titramax

Compact, powerful and temperature-controlled

First-class mixing results in microtiter plates, even with samples with solid content.



Titramax 100

- The space-saving model with a loading capacity of 2 kg is ideally suited for four microtiter plates
- Excellent mixing results are achieved in a gentle manner with the 1.5 mm shaking orbit
- The speed can be adjusted individually and steplessly from 150 to 1,350 rpm
- The timer function for up to 120 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds

Titramax 101

With the larger shaking orbit of 3 mm, this model delivers first-class mixing results even for samples with solid content.

Titramax 1000

For an increased sample throughput: Larger model with top plate for 6 microtiter plates and 5 kg loading capacity. Compatible with Incubator system 1000.

Model	P/N
Titramax 100	544-11200-00
Titramax 101	544-11300-00
Titramax 1000	544-12200-00

Also available as all-inclusive package, see page 29.

For Incubator 1000



More on the Incubator 1000 from page 26.

Rotamax

The compact one – space saving and versatile

Rotamax 120

- Space-saving model with a loading capacity of 2 kg
- With a wide range of attachments for an individual combination – with up to 16 pieces of 25-ml Erlenmeyer flasks
- The speed can be adjusted individually and steplessly from 20 to 300 rpm – for gentle mixing
- The timer function for up to 120 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds



Even when space is limited, best results are achieved with the compact 20-mm orbit shaker.

Duomax

The versatile one – for Petri dishes, culture bottles, staining dishes and all standard vessels

Cell cultures are moved evenly and constantly. The tilting movement ensures excellent results, whether staining, washing or cell culture.

Duomax 1030

- Medium-sized compact model with a loading capacity of 5 kg
- Can be integrated into the modular incubator and is therefore ideal for applications that require temperature control
- Model with a tilt angle of 5° for a gentle motion amplitude
- The speed can be adjusted individually and steplessly from 2 to 50 rpm – ideally suited for all common standard vessels
- The timer function for up to 120 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds
- Also available as model with 10° tilt angle for a stronger motion amplitude



Accessories see page 36

Model	P/N
Rotamax 120	544-41200-00

Accessories see page 35

Model		P/N
Duomax 1030	Tilt angle 5°	543-32205-00
Duomax 1030	Tilt angle 10°	543-32210-00

Unimax

The resilient one – ideally suited for differently sized Erlenmeyer flasks

Unimax 1010

- Medium-sized compact model with a loading capacity of 5 kg
- This shaker can be integrated into the modular incubator and is therefore ideal for applications that require temperature control
- With the 10-mm orbit, your samples are optimally kept in motion, especially in Erlenmeyer flasks
- The speed can be adjusted individually and steplessly from 30 to 500 rpm – for gentle mixing
- The timer function for up to 999 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds

The slow and uniform rotational movement of the Unimax models keeps the samples gently in motion.



For Incubator 1000

Accessories see page 36



Model	P/N
Unimax 1010	543-12310-00
Unimax 2010	542-10020-00

Also available as all-inclusive Unimax package with Incubator 1000, see page 29.

Unimax 2010

For an increased sample throughput

- The large model with a useful area of 39×34 cm and 10 kg loading capacity for increased sample throughput
- For gentle mixing, the speed can be adjusted individually and steplessly from 20 to 400 rpm
- Optionally available with multi-tier design for an above-average sample throughput with low space requirement



Accessories see page 37

Promax

The specialists – ideal for phase separation with steplessly adjustable shaking intensity

Promax 1020

- Medium-sized compact model with a loading capacity of 5 kg
- Can be integrated into the modular incubator and is therefore ideal for applications that require temperature control
- A wide range of accessories and attachments for separatory funnels or Erlenmeyer flasks offers innumerable variation possibilities
- With a stroke of 32 mm, the Promax 1020 achieves the ideal motion for separatory funnels
- The speed can be adjusted individually and steplessly from 30 to 250 rpm – ideally suited for separation
- The timer function for up to 999 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds



With the right shaking intensity: the models are especially suitable for separation in separatory funnels.



Model	P/N
Promax 1020	543-22332-00
Promax 2020	542-20020-00

Accessories see pages 36/37

Promax 2020

For an increased sample throughput and larger vessels. With 10 kg loading capacity, 20 mm stroke and speeds between 20 and 400 rpm – ideally suited for larger quantities.

Polymax

The one with temperature-control – compatible with the modular incubation system

Three-dimensional movements and two different tilt angles for best results – e.g. when staining electrophoresis gels.



For Incubator 1000



Accessories see pages 36/37

Model		P/N
Polymax 1040	Tilt angle 5°	542-20020-00
Polymax 1040	Tilt angle 10°	543-32210-00
Polymax 2040	Tilt angle 5°	542-40005-00
Polymax 2040	Tilt angle 10°	542-40010-00

Incubator 1000

The unique modular system combines everything in one: **Mixing, shaking, temperature-control** – completely without additional heating cabinet. Suitable for the platform shaker models of the 1000 series Duomax 1030, Polymax 1040, Titramax 1000, Unimax 1010 and Promax 1020.

Heating module

The heating module gently heats the circulating air up to 65 °C. The integrated circulating fan ensures even heat distribution within the incubation hood.



Platform shaker

Selecting a compatible model of the 1000 series.



Transparent hood

Stepless locking, without condensate formation (PETG). Three different sizes are available to choose from.



That's all it takes for a space-saving incubation system.



Incubator 1000 Module

Three options: A flat hood for microtiter plates, a high hood for standard vessels and a XL hood for Erlenmeyer flasks up to 2,000 ml.



Heating Module for Incubator 1000

With 300 W heating power for fastest heating times up to 65 °C. The electric circulating air heating with extremely quiet fan guarantees the lowest noise level. The temperature accuracy is $\pm 2^\circ\text{C}$ up to 50 °C or $\pm 4^\circ\text{C}$ over 50 °C. Separate, digital display for continuous monitoring of set and actual values. With overheating protection to prevent thermal damage

P/N 549549-90010-00



Flat Hood

For small vessels and microtiter plates

The flat hood has a low height of 163 mm and is perfectly suited for microtiter plates, Petri dishes, culture bottles and Erlenmeyer flasks from 25 to 100 ml

P/N 549-90040-00



High Hood

For medium-sized vessels

The high hood has a height of 267 mm and is ideally suited for 500 ml Erlenmeyer flasks or tall vessels

P/N 549-90030-00



High Hood XL

For large vessels

The incubation hood XL has a height of 428 mm and is suitable for 2,000 ml Erlenmeyer flasks

P/N 549-90060-00

Packages

Hei-MIX Shakers and Mixers



Titramax ALL-INCLUSIVE PACKAGE

- Titramax 1000
- Heating module Incubator 1000
- Flat incubation hood

P/N 544-12209-00

Unimax ALL-INCLUSIVE PACKAGE

- Unimax 1010
- Heating module Incubator 1000
- High incubation hood

P/N 543-12319-00



Technical Specifications

Hei-MIX Shakers and Mixers

Model	Reax top	Reax control	Multi Reax	Vibramax 100	Vibramax 110
Motion	circular vibrating	circular vibrating	circular vibrating	circular vibrating	circular vibrating
Rotation speed	0–2,500 rpm	0–2,500 rpm	150–2,000 rpm	150–1,350 rpm	150–1,350 rpm
Rotation speed setting	analog / ±scale	analog / numbered scale	digital	electronic control	electronic control
Orbit / stroke	5 mm	5 mm	3 mm	3 mm	1.5 mm
Operating mode	automatic or continuous	automatic or continuous	timer or continuous	timer or continuous	timer or continuous
Timer	–	–	yes	yes	yes
Power input	51 W	51 W	50 W	31 W	31 W
Weight	2.8 kg	2.8 kg	9.8 kg	5.5 kg	5.5 kg
Dimensions w/d/h	134×172×105 mm	134×172×105 mm	270×410×172 mm	245×310×125 mm	245×310×125 mm
Platform size w/d	–	–	–	220×220 mm	220×220 mm
Accessories included	–	–	attachment for 12 or 26 vessels	non-skid rubber mat	non-skid rubber mat
Load capacity	–	–	1.5 kg	2 kg	2 kg
Overheat protection	self-resetting	self-resetting	self-resetting	self-resetting	self-resetting
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
Protection class DIN EN 60529	IP 22	IP 22	IP 30	IP 30	IP 30

Model	Titramax 100	Titramax 101	Titramax 1000	Duomax 1030	Rotamax 120
Motion	circular vibrating	circular vibrating	circular vibrating	rocking	orbital
Rotation speed	150–1,350 rpm	150–1,350 rpm	150–1,350 rpm	2–50 rpm	20–300 rpm
Rotation speed setting	electronic control	electronic control	electronic control	electronic control	electronic control
Orbit / stroke	1.5 mm	3 mm	1.5 mm	–	20 mm
Angle	–	–	–	5/10°	–
Operating mode	timer or continuous	timer or continuous	timer or continuous	timer or continuous	timer or continuous
Timer	yes	yes	yes	yes	–
Power input	31 W	31 W	31 W	115 W	33 W
Weight	5.5 kg	5.5 kg	6.5 kg	8 kg	5.5 kg
Dimensions w/d/h	245×310×125 mm	245×310×125 mm	320×375×125 mm	320×375×185 mm	245×310×125 mm
Platform size w/d	220×220 mm	220×220 mm	290×258 mm	290×258 mm	220×220 mm
Accessories included	space for 4 microtiter plates	space for 4 microtiter plates	space for 6 microtiter plates	non-skid rubber mat	non-skid rubber mat
Load capacity	2 kg	2 kg	5 kg	5 kg	2 kg
Overheat protection	self-resetting	self-resetting	self-resetting	self-resetting	self-resetting
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
Protection class DIN EN 60529	IP 30	IP 30	IP 30	IP 40	IP 30

Standard supply voltage: 230 V. Other supply voltages upon request.

Technical Specifications

Hei-MIX Shakers and Mixers

Model	Unimax 1010	Unimax 2010	Promax 1020	Promax 2020
Motion	orbital	orbital	reciprocating	reciprocating
Rotation speed	30–500 rpm	20–400 rpm	30–250 rpm	20–400 rpm
Rotation speed setting	digital	digital	digital	digital
Orbit / stroke	10 mm	20 mm	32 mm	20 mm
Operating mode	timer or continuous	timer or continuous	timer or continuous	timer or continuous
Timer	yes	yes	yes	yes
Power input	50 W	115 W	50 W	115 W
Weight	8 kg	16 kg	8 kg	16 kg
Dimensions w/d/h	320×375×125 mm	426×435×135 mm	320×375×125 mm	426×435×135 mm
Platform size w/d	290×258 mm	390×340 mm	290×258 mm	390×340 mm
Accessories included	non-skid rubber mat	non-skid rubber mat	non-skid rubber mat	non-skid rubber mat
Load capacity	5 kg	10 kg	5 kg	10 kg
Overheat protection	self-resetting	self-resetting	self-resetting	self-resetting
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
Protection class DIN EN 60529	IP 40	IP 20	IP 40	IP 20

Model	Polymax 1040	Polymax 2040	Reax 2	Reax 20/4	Reax 20/8	Reax 20/12
Motion	wave	wave	overhead	overhead	overhead	overhead
Rotation speed	2–50 rpm	2–50 rpm	20–100 rpm	1–16 rpm*	1–16 rpm*	1–16 rpm*
Rotation speed setting	electronic control	digital	analog	electronic control	electronic control	electronic control
Orbit / stroke	5/10°	5/10°	–	–	–	–
Operating mode	timer or continuous	timer or continuous	–	–	–	–
Timer	yes	yes	–	–	–	–
Power input	115 W	115 W	27 W	280 W	280 W	280 W
Weight	8 kg	16 kg	5.2 kg	23 kg	28 kg	33 kg
Dimensions w/d/h	320×375×195 mm	426×435×208 mm	510×180×235 mm	490×520×465 mm	770×520×465 mm	1050×520×465 mm
Platform size w/d	290×258 mm	390×340 mm	–	–	–	–
Accessories included	non-skid rubber mat	non-skid rubber mat	universal adapter	–	–	–
Load capacity	5 kg	10 kg	1 kg	30 kg	–	–
Overheat protection	self-resetting	self-resetting	self-resetting	self-resetting	–	–
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
Protection class DIN EN 60529	IP 40	IP 20	IP 21	IP 21	IP 21	IP 21

Standard supply voltage: 230 V. Other supply voltages upon request.

* On request also with 2–32 rpm.

Accessories

A wide range of attachments and adapters for numerous applications. Perforated platforms in different sizes enable, for example, the individual equipment with holding clamps, separatory funnel holders or even a multi-tier design.

For Reax top/ Reax control



Test Tube Tray, large

For flasks up to 50 ml

P/N 549-19000-00



Test Tube Holding Device

For secure holding of test tubes in continuous operation

P/N 549-20000-00



Attachment for 10 Test Tubes

For max. 10 reaction vessels with Ø 10 mm, length up to 60 mm

P/N 549-01000-00



Test Tube Stand

For up to 6 Eppendorf vessels (1.5 ml)

P/N 549-04000-00

For Vibramax 100 / Rotamax 120



Tension Roller Attachment

Tension roller attachment with two tension rollers

P/N 549-81000-00



Spare Tension Roller

Additional tension roller, matching the tension roller attachment

P/N 11-008-007-08



Perforated Platform 100

With universal perforation for use with clamps for Erlenmeyer flasks

P/N 549-59100-00



Clamps for Tablar 100

Size	Erlenmeyer flasks	Max. equipment	P/N
1	25 ml	16	549-51000-00
2	50 ml	16	549-52000-00
3	100 ml	8	549-53000-00
4	250 ml	5	549-54000-00
5	500 ml	3	549-55000-00
6	1000 ml	2	549-56000-00

For Vibramax 110



Test Tube Attachment

12 mm

for max. 49 test tubes with Ø 12 mm, length up to 80 mm

P/N 549-82000-00

16 mm

for max. 36 test tubes with Ø 16 mm, length up to 80 mm

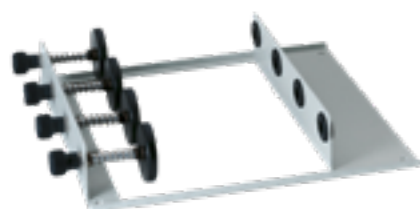
P/N 549-83000-00

For Duomax 1030/Unimax 1010/Promax 1020/Polymax 1040



Erlenmeyer Attachment

For up to 22 Erlenmeyer flasks	25 ml	549-72000-00
For up to 14 Erlenmeyer flasks	50 ml	549-73000-00
For up to 9 Erlenmeyer flasks	100 ml	549-74000-00
For up to 5 Erlenmeyer flasks	250 ml	549-75000-00
For up to 4 Erlenmeyer flasks	500 ml	549-76000-00
For up to 2 Erlenmeyer flasks	1000 ml	549-77000-00



Separatory Funnel Attachment

Suitable for 4 conical separatory funnels, each 50 ml or 100 ml

P/N 549-78000-00



Frame with Tension Roller

Tension roller attachment with two tension rollers

P/N 549-70000-00



Spare Tension Roller

Additional tension roller, matching the tension roller attachment

P/N 549-71000-00



Tablar 1000

With universal perforation for use with clamps for Erlenmeyer flasks and separatory funnels

P/N 549-59200-00



Clamps for Tablar 1000

Size	Erlenmeyer flask	Max. equipment	P/N
1	25 ml	20	549-51000-00
2	50 ml	20	549-52000-00
3	100 ml	14	549-53000-00
4	250 ml	8	549-54000-00
5	500 ml	4	549-55000-00
6	1000 ml	4	549-56000-00
7	2000 ml	2	549-63000-00

For Unimax 2010/Promax 2020/Polymax 2040



Frame Tension Roller

For attaching the tension rollers to secure any kind of vessel (see design Promax 2020, page 24)

P/N 549-50000-00



Spare Tension Roller

Together with the base frame for securing any kind of vessel (order at least 2 pieces)

P/N 549-58000-00



Multi-tier Attachment

For multi-tier design incl. perforated platform 2000

P/N 549-62000-00



Perforated Platform 2000

For use with clamps for Erlenmeyer flasks and separatory funnels

P/N 549-59000-00



Clamps for Tablar 2000

Size	Erlenmeyer flask	Max. equipment	P/N
1	25 ml	36	549-51000-00
2	50 ml	36	549-52000-00
3	100 ml	23	549-53000-00
4	250 ml	12	549-54000-00
5	500 ml	9	549-55000-00
6	1000 ml	5	549-56000-00
7	2000 ml	3	549-63000-00

Separatory Funnel Clamp

250, 500, 1000 ml for Tablar 2000

max. 4 (250 ml), 3 (500 ml) or 3 (1000 ml) holding devices per tablar

P/N 549-57000-00

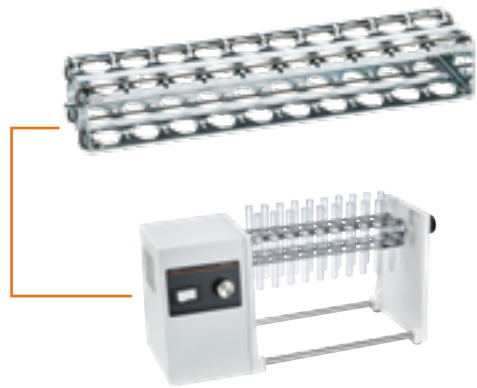
2000 ml for Tablar 2000

max. 2 holding devices per tablar

P/N 549-61000-00



For Reax 2



Adaptor for 20 Test Tubes

For max. 20 test tubes with \varnothing 10–18 mm,
loading capacity 1 kg

P/N 549-21000-00

For Reax 20



Tension Plate for Caps

For standard vessels with \varnothing 94 mm

P/N 11-001-001-81

Attachment

0.5l
for 4x 0.5-l bottles

P/N 549-27000-00

1.0l
for 4x 1.0-l bottles

P/N 549-26000-00

Hei-FLOW Peristaltic Pumps

Continuous pumping, precise dosing

Whether simple pumping or precise dosing. Even in interval mode, with pauses for filling small vessels – the Hei-FLOW series meets all your requirements. Thanks to the large selection of pump heads, the peristaltic pumps can be customized.





Leading Safety Standards

- Motors with soft start reliably protect against spraying medium: The speed is slowly increased to the set speed
- The spark-free motors guarantee additional safety
- High resistance to corrosive vapors and liquids due to protection class IP 55. Short-circuits, failures and accidents are prevented
- Additional safety during unattended continuous operation: To prevent overheating, the motor is switched off in the event of permanent overload
- With the optional foot switch, selected models can also be controlled in a closed fume hood
- The medium to be pumped is only in contact with the inside of the tubing and not with the pump itself



Superior Ease of Use

- The pumps of the Hei-FLOW series are self-priming and do not require seals or valves
- Analog and digital interfaces, for example for connecting the remote control for easier operation
- Thanks to the high precision, minimum volumes of only 0.005 ml/min can be pumped
- The drive for a standard pump head can be converted to a multi-channel system in minutes
- The clearly arranged control panel is self-explanatory and makes everyday use easier
- Efficient use of valuable laboratory space: The pumps can be stacked two-fold
- Basically, the pump heads do not have to be cleaned as they pump contamination-free – this saves cleaning between two applications
- There are 3 pump types, each with two different gear ratios – fast or powerful





MADE IN
GERMANY

All Benefits at a Glance

3-year warranty on all devices and an average operational lifespan of more than 10 years

Precise Dosing and Dispensing

Reduced Cost of Ownership

- The sealed housing reliably protects the pump against corrosion and increases the operational lifespan to more than 10 years. Maintenance and repair costs are reduced at the same time
- Complete packages with pump head and tubing spare from searching for compatible components and are available at an attractive price
- Maintenance-free motors avoid downtimes and repair costs
- The matching tubing for every application – from certified materials for food (FDA) and pharmaceuticals to materials for organic media – everything is included in the large range of accessories



A pump head with convex shaped rollers that does not pinch the tubing in the conventional way is suitable for cell research.

Motors with soft start reliably protect against spraying medium: The speed is slowly increased to the set speed

All models meet the high protection class IP 55. Corrosion and short circuits are avoided

Highest precision even at minimum flow rates of 0.005 ml/min

The use of an optional foot switch allows operation behind closed fume hoods and facilitates filling operations; your hands are free for other activities



Additional safety during unattended continuous operation: To prevent overheating from the outset, the motor is switched off in the event of permanent overload.

For applications in biology: The pump head with convex shaped rollers enables cell-protecting pumping

Hei-FLOW Value

The intuitive companion for simple pumping tasks

Value 01

For standard applications in the low speed range and powerful with higher torque with single-channel pump heads from 0.85 to 861 ml/min

Value 06

For single channel standard applications in the high speed range and flow rates from 4.0 to 4,151 ml/min*

- Analog control of pumping speed:
Type 01: from 10 to 120 rpm;
Type 06: from 50 to 600 rpm
- Constant speed even under changing loads
- Pumping with an accuracy of $\pm 5\%$
- Change of flow direction in clockwise or counter-clockwise direction possible

* with single-channel pump head



Value 01 Multi

Incl. adapter for multi-channel pump heads for flow rates from 0.005 to 364 ml/min



Multi-channel pump heads achieve flow rates between 0.005 and 364 ml/min. Easy to retrofit with adapter attachment and corresponding pump head.

Hei-FLOW Advantage

For reproducible pumping tasks

With analogue interface for controlling speed and direction of rotation as well as on/off function.

Advantage 01

With low speed range and powerful with higher torque from 0.38 to 813 ml/min

Advantage 06

With high speed range for flow rates with single-channel pump heads from 2.0 to 4,056 ml/min

- Analog control of pumping speed:
Type 01: from 5–120 rpm
Type 06: from 24–600 rpm
- Constant speed even under changing loads by means of electronic speed control
- Pumping with an accuracy of $\pm 3.5\%$
- Maximum speed button accelerates filling and emptying of the tubes
- Change of flow direction in clockwise or counter-clockwise direction possible
- With the optional foot switch, can also be controlled in a closed fume hood



Advantage 01 Multi

For even higher precision with adapters for multi-channel pump heads. For flow rates of 0.005 to 329 ml/min

Multi-channel cassette in three sizes for flow rates of 0.005 to 364 ml/min (see page 59)

Model	P/N
Hei-FLOW Value 01	523-50010-00
Hei-FLOW Value 01 Multi	incl. adapter for multi-channel pump heads 523-50013-00
Hei-FLOW Value 06	523-50060-00

Model	P/N
Hei-FLOW Advantage 01	523-51010-00
Hei-FLOW Advantage 01 Multi	incl. adapter for multi-channel pump heads 523-51013-00
Hei-FLOW Advantage 06	523-51060-00

Hei-FLOW Precision

For highest demands – the precise pump for exact dosing

With digital display and analogue and digital interface. Individual calibration of flow rate and volume possible.

- Control of speed, direction of rotation and on/off function via analog interface for 0 to 10 V, 4 to 20 mA DC or digital via the integrated RS 232 interface
- Easy calibration of pumping volume and flow rate
- Pumping characteristics of the pump heads are stored in the program, digital indication in the display
- With change of flow direction in clockwise or counter-clockwise direction
- Process parameters are freely adjustable: Speed, tube diameter, dosing volume, interval dosing and pause times
- Pumping accuracy of ± 1% with Precision 01 and ± 2% with Precision 06, guarantees constant speeds even under load changes
- With button for maximum speed. Accelerates filling and emptying of the tubes

Precision 01

For higher precision in the low speed range for flow rates from 0.38 to 813 ml/min

Precision 06

With high speed range for flow rates with single-channel pump heads from 2.0 to 4,056 ml/min

Precision 01 Multi

Incl. adapter for multi-channel pumps for maximum precision at flow rates from 0.005 to 364 ml/min



Starting and stopping the dosing process with the optionally available foot switch – your hands are free for other tasks (see page 48)

Model	P/N
Hei-FLOW Precision 01	523-51010-00
Hei-FLOW Precision 01 Multi	incl. adapter for multi-channel pump heads 523-51013-00
Hei-FLOW Precision 06	523-51060-00

Packages with Multi-Channel Pump Heads

Hei-FLOW Peristaltic Pumps



Hei-FLOW SILVER 1

- Hei-FLOW Value 01
- SP quick 1.6
- 1 m each Tygon and silicone tube (inside Ø 3.1 mm)

P/N 523-50019-00

Hei-FLOW SILVER 2

- Hei-FLOW Value 06
- SP standard 2.5
- 1 m each Tygon and silicone tube (inside Ø 6.4 mm)

P/N 523-50068-00

Hei-FLOW GOLD

- Hei-FLOW Advantage 01
- SP quick 1.6
- 1 m each Tygon and silicone tube (inside Ø 0.8 mm)

P/N 523-51019-00

Hei-FLOW PLATINUM

- Hei-FLOW Precision 01
- SP quick 1.6
- 1 m each Tygon and silicone tube (inside Ø 0.8 mm)

P/N 523-52019-00



Accessories



Foot Switch

For starting and stopping the pumping and dosing process for: Hei-FLOW Advantage 01/06 and Hei-FLOW Precision 01/06

P/N 526-14100-00



Adaptor for multi-channel pump heads

For Hei-FLOW Value 01/Advantage 01/Precision 01. Connection between pump drive and multi-channel pump head

P/N 526-16000-00



Tubing Connector

For tubing sizes 0.2–2.8 mm

P/N 526-22000-00



RS 232 Cable

For connecting Hei-FLOW Precision pumps to a PC via the digital interface (RS 232)

P/N 14-007-040-68

Technical Specifications

Hei-FLOW Value

Model	Hei-FLOW Value 01	Hei-FLOW Value 06
Flow rates single-channel pumps	0.85–861 ml/min	4.0–4,151 ml/min
Flow rates multi-channel pumps	0.005–364 ml/min	–
Flow rate accuracy*	±5 %	±5 %
Speed range	10–120 rpm	50–600 rpm
Speed setting	scale	scale
Electronic speed control	digital	digital
Control accuracy motor	±0.5 %	±0.5 %
Select direction of rotation	CW/CCW	CW/CCW
Motor power	100 W	100 W
Supply power	100 W	100 W
Analog interface	–	–
Digital interface	–	–
Flow rate indicator	–	–
Volume dosing	–	–
Interval dosing	–	–
Smooth start	–	–
Electronic brake	–	–
Foot-pedal connection	–	–
Continuous operation	hours/days 24/7	24/7
Safety feature	overheat protection	overheat protection
Weight	7.6 kg	7.1 kg
Dimensions	w/d/h 166×256×225 mm	166×256×225 mm
Permissible ambient conditions	5–31 °C at 80 % rel. humidity, 32–40 °C decreasing linearly up to max. 50 % rel. humidity	5–31 °C at 80 % rel. humidity, 32–40 °C decreasing linearly up to max. 50 % rel. humidity
Protection class	DIN EN 60529 IP 55	IP 55

Standard supply voltage: 230 V. Other voltages upon request, please specify for order.

* Flow-rate accuracy pertains to water without counter pressure

Technical Specifications

Hei-FLOW Advantage

Model	Hei-FLOW Advantage 01	Hei-FLOW Advantage 06
Flow rates single-channel pumps	0.38–813 ml/min	2.0–4,056 ml/min
Flow rates multi-channel pumps	0.005–329 ml/min	–
Flow rate accuracy*	±3.5%	±3.5%
Speed range	5–120 rpm	24–600 rpm
Speed setting	scale	scale
Electronic speed control	digital	digital
Control accuracy motor	±0.5%	±0.5%
Select direction of rotation	CW/CCW	CW/CCW
Motor power	100 W	100 W
Supply power	100 W	100 W
Analog interface	for speed 0–10 V/4–20 mA direction of rotation start/stop	for speed 0–10 V/4–20 mA direction of rotation start/stop
Digital interface	–	–
Flow rate indicator	–	–
Volume dosing	–	–
Interval dosing	–	–
Smooth start	–	–
Electronic brake	–	–
Foot-pedal connection	yes	yes
Continuous operation	hours/days 24/7	24/7
Safety feature	electronic current limiter and overheat protection	electronic current limiter and overheat protection
Weight	7.6 kg	7.3 kg
Dimensions	w/d/h 166×256×225 mm	166×256×225 mm
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
Protection class	DIN EN 60529 IP 55	IP 55

Standard supply voltage: 230 V. Other voltages upon request, please specify for order.

* Flow-rate accuracy pertains to water without counter pressure

Technical Specifications

Hei-FLOW Precision

Model	Hei-FLOW Precision 01	Hei-FLOW Precision 06
Flow rates single-channel pumps	0.38– 813 ml/min	2.0–4,056 ml/min
Flow rates multi-channel pumps	0.005–329 ml/min	–
Flow rate accuracy*	±1%	±2%
Speed range	5–120 rpm	24–600 rpm
Speed setting	digital	digital
Electronic speed control	digital	digital
Control accuracy motor	±0.5%	±0.5%
Select direction of rotation	CW/CCW	CW/CCW
Motor power	100 W	100 W
Supply power	100 W	100 W
Analog interface	for speed 0–10 V/4–20 mA direction of rotation start/stop	for speed 0–10 V/4–20 mA direction of rotation start/stop
Digital interface	RS 232	RS 232
Flow rate indicator	digital	digital
Volume dosing	0.001–9,999 ml	0.001–9,999 ml
Interval dosing	0.001–9,999 ml in breaks 0.1 sec–750 h	0.001–9,999 ml in breaks 0.1 sec–750 h
Smooth start	yes	yes
Electronic brake	yes	yes
Foot-pedal connection	yes	yes
Continuous operation	hours/days 24/7	24/7
Safety feature	electronic current limiter and overheat protection	electronic current limiter and overheat protection
Weight	7.7 kg	7.3 kg
Dimensions	w/d/h 166×256×225 mm	166×256×225 mm
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
Protection class	DIN EN 60529 IP 55	IP 55

Standard supply voltage: 230 V. Other voltages upon request, please specify for order.

* Flow-rate accuracy pertains to water without counter pressure

Single-Channel Pump Heads

Customizing Hei-FLOW models

Pumping and dosing for all types of applications, also in special fields such as the transfer of cell cultures. The sealed ball bearings protect against corrosion and ensure reliable continuous operation. With the versatile selection of pump heads for single-channel operation, the right solution can be configured for every application.

A pump head with convex shaped rollers is recommended for cell research. These rollers do not pinch the tubing and the cell cultures are protected.



SP quick

For quick and easy tubing change by means of a practical lever

- Low pulsation due to five rollers
- Sealed ball bearings
- Stainless steel rollers and roller supports
- Flow rates from 0.38 to 3,436 ml/min depending on drive and tubing used

For tubing wall thickness 1.6 mm
P/N 527-11100-00

For tubing wall thickness 2.5 mm
P/N 527-11300-00



SP standard

All-purpose for simple pumping tasks

- Convex rollers to prevent damaging the cell cultures
- Sealed ball bearings
- Stainless steel rollers, polyamide roller supports
- Depending on the drive and tubing used, flow rates from 2.0 to 4,151 ml/min can be achieved

For tubing wall thickness 1.6 mm
P/N 523-43010-00

For tubing wall thickness 2.5 mm
P/N 523-43030-00



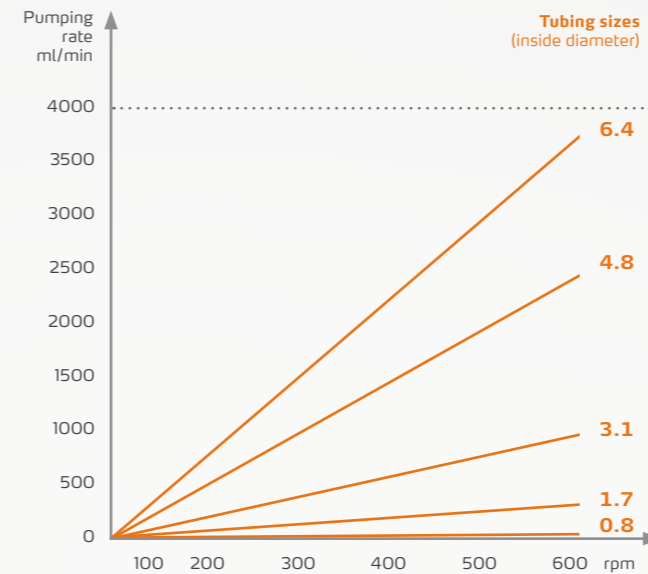
SP vario

Flexible for versatile use

- Rotor with adjustable roller distance, for adaptation to the tubing wall thickness
- Convex rollers to prevent damaging the cell cultures
- Sealed ball bearings
- Stainless steel rollers, coated aluminum roller supports
- Flow rates from 2.0 to 4,151 ml/min depending on drive and tubing used

P/N 523-45110-00

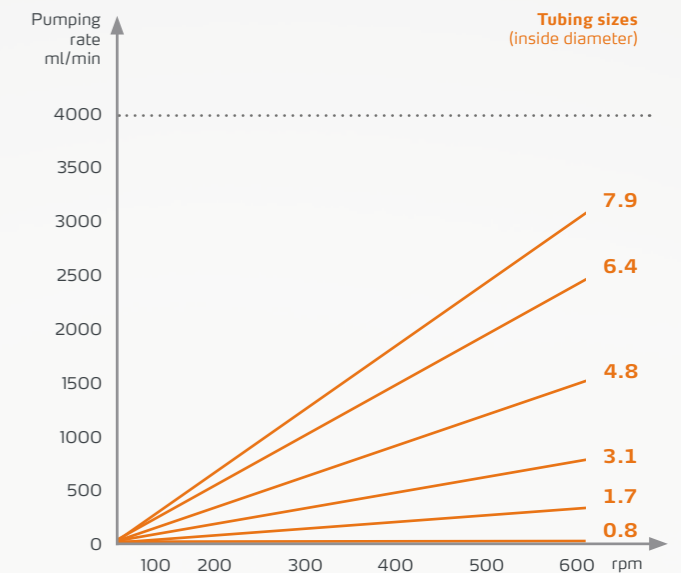
Flow rates for single-channel pump heads







SP standard SP vario







SP quick



Tubing sizes for single-channel pump heads

Tubing sizes					
Inside diameter	mm	0.8	1.7	3.1	4.8
Outside diameter	mm	4	4.9	6.3	8
Tubing wall thickness (WT)	mm	1.6	1.6	1.6	1.6
Max. operating pressure (duration/short-term) bar		0.7/1.7	0.7/1.7	0.7/1.7	0.5/1.5
Suction lift	mH ₂ O	8.8	8.8	8.8	8.8

Tubing sizes					
Inside diameter	mm	6.4	4.8	6.4	7.9
Outside diameter	mm	9.5	9.8	11.3	12.9
Tubing wall thickness (WT)	mm	1.6	2.5	2.5	2.5
Max. operating pressure (duration/short-term) bar		0.5/1.5	0.8/1.8	0.8/1.8	0.8/1.8
Suction lift	mH ₂ O	6.7	8.8	8.8	8.8

Mean value of the flow rate in combination with pump head and pump drive

SP quick		min.	max.	min.	max.	min.	max.	min.	max.
Hei-FLOW Advantage 06 / Precision 06	ml/min	2	33	8	186	26	653	59	1,529
Hei-FLOW Value 06	ml/min	4	35	17	197	57	695	123	1,494
Hei-FLOW Advantage 01 / Precision 01	ml/min	0.38	9	2	40	5	126	12	233
Hei-FLOW Value 01	ml/min	0.83	9	3	41	11	134	25	292

SP standard / SP vario		min.	max.	min.	max.	min.	max.
Hei-FLOW Advantage 06 / Precision 06	ml/min	11	257	43	1,017	105	2,549
Hei-FLOW Value 06	ml/min	22	249	93	1,037	228	2,613
Hei-FLOW Advantage 01 / Precision 01	ml/min	2	55	9	221	21	530
Hei-FLOW Value 01	ml/min	5	61	19	223	44	519

All flow rate data refer to Tygon® standard tubing and the medium water.

Order numbers

Tubing (per meter)	P/N	P/N	P/N	P/N
Silicone	525-33000-00	525-34000-00	525-36000-00	525-30027-00
Viton®	525-53000-00	525-54000-00	525-56000-00	525-50027-00
PharMed®	525-23000-00	525-24000-00	525-26000-00	525-20027-00
Tygon® standard	525-63000-00	525-64000-00	525-66000-00	525-60027-00
Tygon® for hydrocarbons	525-73000-00	525-74000-00	525-76000-00	525-70027-00
Tygon® 2001 for food	525-83000-00	525-84000-00	525-86000-00	525-80027-00

SP quick		min.	max.	min.	max.	min.	max.	min.	max.
Hei-FLOW Advantage 06 / Precision 06	ml/min	89	2,072	58	1,527	85	2,248	113	3,174
Hei-FLOW Value 06	ml/min	186	1,765	123	1,580	180	2,411	257	3,436
Hei-FLOW Advantage 01 / Precision 01	ml/min	17	409	12	299	18	435	25	630
Hei-FLOW Value 01	ml/min	36	413	26	299	38	454	50	636

SP standard / SP vario		min.	max.	min.	max.	min.	max.
Hei-FLOW Advantage 06 / Precision 06	ml/min	167	4,056	92	2,390	139	3,821
Hei-FLOW Value 06	ml/min	364	4,151	203	2,426	313	3,782
Hei-FLOW Advantage 01 / Precision 01	ml/min	33	813	15	491	28	769
Hei-FLOW Value 01	ml/min	75	861	42	493	68	773

All flow rate data refer to Tygon® standard tubing and the medium water.

Tubing (per meter)	P/N	P/N	P/N	P/N
Silicone	525-30028-00	525-35000-00	525-39000-00	525-32000-00
Viton®	525-50028-00	525-55000-00	525-59000-00	525-52000-00
PharMed®	525-20028-00	525-25000-00	525-29000-00	525-22000-00
Tygon® standard	525-60028-00	525-65000-00	525-69000-00	525-62000-00
Tygon® for hydrocarbons	525-70028-00	525-75000-00	525-79000-00	525-72000-00
Tygon® 2001 for food	525-80028-00	525-85000-00	525-89000-00	-

Multi-Channel Pumps

More efficiency, even more possibilities

With the easily exchangeable cassettes, the throughput of the Hei-FLOW multi-channel pump can be increased to up to 12 simultaneously operated channels.

The following models are suitable for multi-channel operation:

Hei-FLOW Value O1/Advantage O1/Precision O1

Simply select the appropriate Hei-FLOW model (drive of the O1 series) adapter and multi-channel pump head and equip with suitable cassettes and tubing.

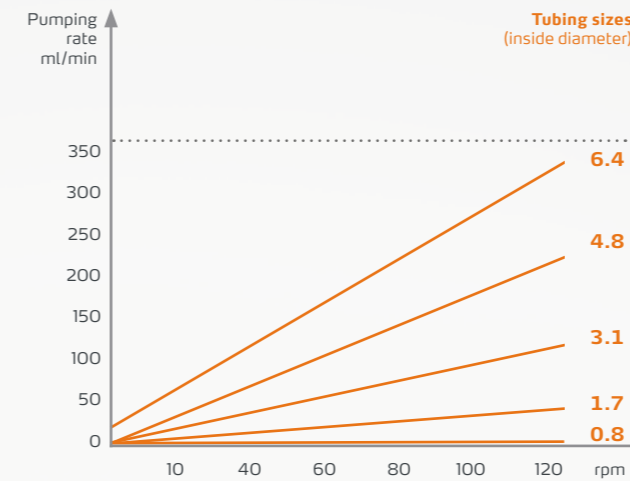
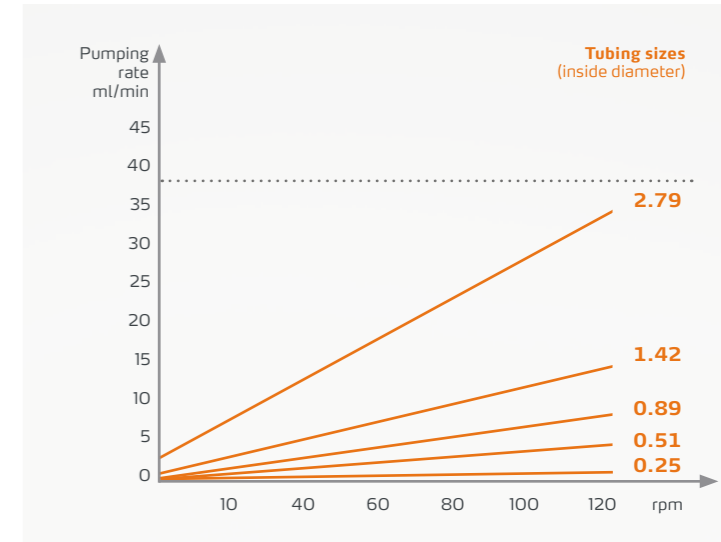
- When using tubing with different diameters per cassette, up to 12 individual pumping volumes can be processed in one operation
- The tubing can be changed easily and in a matter of seconds
- Pump heads with 8-roller system are also available to reduce pulsation
- A snap-action device makes inserting all cassettes child's play and even allows easy replacement during ongoing operation



Flow rates of individual tubing sizes for multi-channel pump heads

Multi-Channel Pump Head C 4

For Cassette small



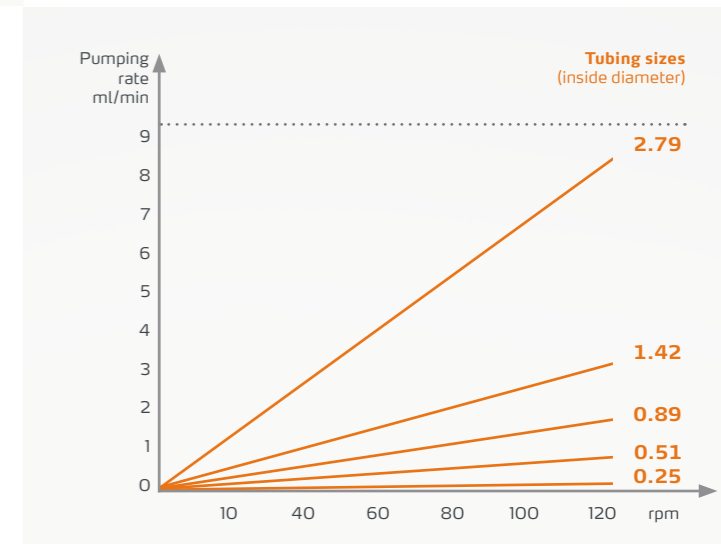
Multi-Channel Pump Head C 8

For Cassette medium or Cassette large



Multi-Channel Pump Head C 12

For Cassette small



Multi-Channel Pump Heads

Easy to configure or retrofit

All compatible models are also available as package "O1 Multi" incl. adapter for the use with multi-channel pump heads.



Precise dosing or customized pumping

Low-pulsation pumping with the C 4 and C 12 multi-channel pump heads thanks to the 8-roller system and high-precision dosing depending on the tubing configuration. The C 12 model is optimally equipped for the smallest volumes thanks to an integrated gear support – for flow rates from 0.005–54 ml/min. For Cassette small (C 4/C 12), Two-Stop tubing is required. For Cassette medium and Cassette large (C 8) tubing by the meter.



Multi-Channel Pump Head C 4

- Can be equipped with 4 x Cassette small
- 8 rollers for low-pulsation pumping

P/N 524-80420-00



Multi-Channel Pump Head C 8

- Can be equipped with 8 x Cassette medium or 4 x Cassette large
- 4-roller system

P/N 524-40810-00



Multi-Channel Pump Head C 12

- Can be equipped with 12 x Cassette small
- Due to integrated gear reduction ideal for pumping smallest volumes
- 8 rollers for low-pulsation pumping

P/N 524-81220-00

Multi-Channel Cassettes

Easily exchangeable cassettes even during the pumping process. The roller contact pressure is adjusted by means of an adjusting screw. Different tubing and sizes can be used in each cassette.



Cassette small

- Flow rates from 0.005–37.0 ml/min
- Suitable for tubes with 0.9 mm tubing wall thickness
- Available tube diameters: 0.2/0.5/0.9/1.4 and 2.8 mm
- Special Two-Stop tubing (length 40 cm) required for insertion into the cassette
- The tube is fixed by tubing stoppers
- With tubing connectors and extension tubes, it is possible to extend the tubing length by the meter

Equipped with:

Multi-channel pump head C 4:
max. 4 x Cassette small

Multi-channel pump head C 12:
max. 12 x Cassette small

P/N 524-90022-00



Cassette medium

- Flow rates from 0.24–27.0 ml/min
- Suitable for tubes with 1.6 mm tubing wall thickness
- Available tube diameters: 0.8 and 1.7 mm
- Tubing available by the meter

Equipped with:

Multi-channel pump head C 8:
max. 8 x Cassette medium

P/N 524-90021-00



Cassette large






- Flow rates from 1.0–364.0 ml/min
- Suitable for tubes with 1.6 mm tubing wall thickness
- Available tube diameters: 1.7/3.1/4.8 and 6.4 mm
- Tubing available by the meter






Equipped with:

Multi-channel pump head C 8:
max. 4 x Cassette large

P/N 524-90010-00

Tubing sizes for multi-channel pump heads

Tubing sizes						
Inside diameter	mm	0.25	0.51	0.89	1.42	2.79
Outside diameter	mm	2.05	2.31	2.69	3.22	4.59
Tubing wall thickness (WT)	mm	0.9	0.9	0.9	0.9	0.9
Max. operating pressure (duration/short-term)	bar	0.5 / 1.5	0.5 / 1.5	0.5 / 1.5	0.5 / 1.5	0.5 / 1.5
Suction lift	mH ₂ O	7	7	7	7	7

Tubing sizes						
Inside diameter	mm	0.8	1.7	3.1	4.8	6.4
Outside diameter	mm	4	4.9	6.3	8	9.5
Tubing wall thickness (WT)	mm	1.6	1.6	1.6	1.6	1.6
Max. operating pressure (duration/short-term)	bar	0.7 / 1.7	0.7 / 1.7	0.7 / 1.7	0.7 / 1.7	0.5 / 1.5
Suction lift	mH ₂ O	8.8	8.8	8.8	8.8	6.7

Mean value of the flow rate in combination with pump head and pump drive

Hei-FLOW Advantage O1 Hei-FLOW Precision O1		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	max. number of cass.
Cassette small Pump head C 12	ml/min	0.005	0.11	0.01	0.54	0.03	1	0.10	3	0.29	9	12
Cassette small Pump head C 4	ml/min	0.02	0.49	0.08	2	0.24	6	0.60	14	2	36	4
Hei-FLOW Value O1		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	max. number of cass.
Cassette small Pump head C 12	ml/min	0.005	0.11	0.02	0.42	0.10	1	0.23	3	0.69	8	12
Cassette small Pump head C 4	ml/min	0.04	0.53	0.17	2	0.57	6	1	15	4	37	4

All flow rate data refer to Tygon® standard tubing and the medium water.

Hei-FLOW Advantage O1 Hei-FLOW Precision O1		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	max. number of cass.
Cassette medium Pump head C 8	ml/min	0.24	7	1	26							8
Cassette large Pump head C 8	ml/min			1	27	4	90	8	192	11	329	4
Hei-FLOW Value O1		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	max. number of cass.
Cassette medium Pump head C 8	ml/min	0.55	6.97	2.17	27							8
Cassette large Pump head C 8	ml/min			2	27	7	85	18	246	26	364	4

All flow rate data refer to Tygon® standard tubing and the medium water.

Order numbers

Tubing	P/N	P/N	P/N	P/N	P/N
Silicone					
Two-Stop tubing for Cassette small			525-30014-00	525-30015-00	525-30016-00
Extension tubes (by the meter)			525-30024-00	525-30025-00	525-30026-00
Viton®					
Two-Stop tubing for Cassette small			525-00014-00	525-00015-00	525-50016-00
Extension tubes (by the meter)			525-00024-00	525-00025-00	525-50026-00
PharMed®					
Two-Stop tubing for Cassette small	525-20012-00	525-20013-00	525-20014-00	525-20015-00	525-20016-00
Extension tubes (by the meter)	525-20022-00	525-20023-00	525-20024-00	525-20025-00	525-20026-00
Tygon® standard					
Two-Stop tubing for Cassette small	525-60012-00	525-60013-00	525-60014-00	525-60015-00	525-60016-00
Extension tubes (by the meter)	525-60022-00	525-60023-00	525-60024-00	525-60025-00	525-60026-00
Tubing connector (PTFE)	526-22000-00	526-22000-00	526-22000-00	526-22000-00	526-22000-00

Tubing	P/N	P/N	P/N	P/N	P/N
Silicone	525-33000-00	525-34000-00	525-36000-00	525-30027-00	525-30028-00
Viton®	525-53000-00	525-54000-00	525-56000-00	525-50027-00	525-50028-00
PharMed®	525-23000-00	525-24000-00	525-26000-00	525-20027-00	525-20028-00
Tygon® standard	525-63000-00	525-64000-00	525-66000-00	525-60027-00	525-60028-00
Tygon® for hydrocarbon	525-73000-00	525-74000-00	525-76000-00	525-70027-00	525-70028-00
Tygon® 2001 for food	525-83000-00	525-84000-00	525-86000-00	525-80027-00	525-80028-00

Tubing Selection



Tygon® standard

General applications in the laboratory

- Non-toxic, non-oxidizing
- Good resistance to acids, lyes and inorganic media
- Very low gas permeability, long service life
- Thermoplastic soft PVC, transparent



Tygon® 2001 for food

Ideal for products with a high fat content

- Extremely resistant to chemicals, e.g. suitable for the use of polar solvents
- Contains no plasticizers or oils
- Particularly long service life
- Transparent for improved visual inspection
- Extremely flexible
- Thermoplastic, transparent



Tygon® for hydrocarbons

Especially for hydrocarbons, petroleum products and distillates

- Ideal for petrol, kerosene, fuels and lubricants, heating oil, cutting fluids and glycol-based coolants
- Ozone- and UV-resistant
- Thermoplastic soft PVC, yellow translucent



PharMed®

Ideal for medical, laboratory and research applications

- High flexural fatigue strength
- Non-toxic, biocompatible
- Very low gas permeability
- Well suited for acids and lyes
- Polypropylene-based thermoplastic elastomer with plasticizers, opaque beige



Silicone

For use in pharmacy and biology

- Extremely smooth inner surface (platinum plated) prevents possible bacterial growth
- Biocompatible, minimal adsorption and absorption
- Best flow properties, high temperature stability
- Absolutely inert, plasticizer-free
- Polydimethylsiloxane with silica and silicone additives, excellent contact pressure resistance, translucent white



Viton®

Excellent acid resistance at high temperatures

- Low gas permeability
- Resistant to solvents and corrosive media
- Fluorocarbon rubber, thermoformed Viton B (67% fluorinated), opaque black

Complies with the following standards:
FDA, USP Class VI, ISO 10993, 10/204/EU, does not contain chemicals listed in California Proposition 65

Temperature range:
-50 to +75 °C

Sterilization:
Autoclavable at 120 °C, 30 min. at 1 bar (assumes milky color) or with ethylene oxide

Restrictions:
Release of plasticizers possible

Complies with the following standards:
FDA (21 CFR 177.2600), USP Class VI and GLP

Temperature range:
-78 to +71 °C

Sterilization:
Autoclavable, 30 min. at 1 bar, sterilizable by radiation or ethylene oxide

Complies with the following standards:
GLP

Temperature range:
-40 bis +75 °C

Sterilization:
Not recommended

Restrictions:
Not suitable for strong lyes and acids as well as food and pharmaceuticals

Complies with the following standards:
USP Class VI, GLP, USP and Ph. Eur.

Temperature range:
-51 to +135 °C

Sterilization:
Autoclavable or sterilizable by ethylene oxide or radiation

Restrictions:
Release of additives possible

Complies with the following standards:
USP Class VI, GLP and NSF

Temperature range:
-80 to +200 °C

Sterilization:
Autoclavable, 30 min at 1 bar or sterilizable with radiation

Restrictions:
Unsuitable for concentrated solvents, oils, acids or diluted caustic lye of soda, relatively high gas permeability

Complies with the following standards:
GLP

Temperature range:
-30 to +205 °C

Sterilization:
16 h at +250 °C with hot air circulation recommended

Restrictions:
Restricted service life

Tubing Characteristics



Used with	Tygon® standard	Tygon® 2001 for food	Tygon® for hydrocarbons
Acids	good	excellent	good
Lyes	good	excellent	good
Solvents	unsuitable	good	conditional
Pressure	good	good	good
Vacuum	good	good	good
Viscous media	excellent	good	excellent
Sterile media	conditional	good	conditional



Used with	PharMed®	Silicone	Viton®
Acids	good	conditional	excellent
Lyes	good	conditional	excellent
Solvents	unsuitable	unsuitable	varying, test recommended
Pressure	good	satisfactory	good
Vacuum	excellent	good	good
Viscous media	good	satisfactory	good
Sterile media	excellent	excellent	satisfactory

Tubing Compatibility

	Chemical	P	S	T	TU	TK	V
A	Acetaldehyde	D	C	D	D	D	D
	Acetic acid, 10% in W.	A	A	A	A	A	-
	Acetic acid, 100%	B	D	D	D	-	-
	Acetic anhydride	A	A	D	D	A	D
	Acetone	D	C	D	D	C	D
	Acetonitrile	C	D	D	D	B	D
	Acetyl bromide	C	D	D	D	C	-
	Acetyl chloride	C	D	D	D	C	A
	Aliphatic hydrocarbons	D	D	D	B	D	-
	Aluminum chloride, 53% in W.	A	A	A	A	A	A
	Aluminum sulfate, 50% in W.	A	A	A	A	A	A
	Aluminum salts	A	A	A	A	A	-
	Ammonia, gas and liquid	A	D	B	B	B	D
	Ammonium acetate, 45% in W.	A	A	A	A	A	-
	Ammonium carbonate, 20% in W.	A	A	A	A	A	A
	Ammonium chloride	A	C	A	A	A	A
	Ammonium hydroxide, 30% in W.	A	D	A	C	A	B
	Ammonium nitrate	A	C	A	A	A	-
	Ammonium phosphate	A	A	A	A	A	-
	Ammonium sulfate	B	A	A	A	A	D
	Amyl acetate	B	D	D	D	D	A
	Amyl alcohol	D	D	D	A	A	A
	Amyl chloride	C	D	D	D	D	-
	Aniline	C	D	D	D	D	D
	Aniline hydrochloride	C	D	D	D	D	B
Aqua regia (80% HCl, 20% HNO ₃)	D	D	D	D	A	-	
Aromatic hydrocarbons	A	D	D	D	D	-	
Arsenic salts	A	A	A	A	A	-	
B	Barium salts	A	A	A	A	A	-
	Benzaldehyde	D	C	D	D	C	D
	Benzene	D	D	D	D	-	-
	Benzenesulfonic acid	D	D	D	D	D	A
	Boric acid, 4% in W.	A	A	A	A	A	A
	Bromine	D	D	D	D	D	A
	Butane	A	A	A	A	B	A
	Butanol (butyl alcohol)	D	B	D	A	A	A
	Butyl acetate	B	D	D	D	D	-
	Butyric acid	B	D	D	C	D	D
C	Calcium oxide	A	A	A	A	A	-
	Carbon bisulfide	D	D	D	D	D	-
	Carbon tetrachloride	D	D	D	D	D	A

	Chemical	P	S	T	TU	TK	V	
D	Chlorine, wet	D	D	B	B	C	B	
	Chloroacetic acid, 20% in W.	B	A	A	D	A	D	
	Chlorobenzene	D	D	D	D	C	A	
	Chloroform	D	D	D	D	C	A	
	Chlorobromomethane	B	D	D	D	-	A	
	Chromic acid, 20% in W.	A	D	B	C	B	A	
	Chromic acid, 50% in W.	C	D	C	D	-	-	
	Copper salts	A	A	A	A	A	-	
	Cyclohexane	D	D	D	C	D	A	
	Cyclohexanone	D	D	D	D	C	D	
	Chlorosulfonic acid	D	D	D	D	D	D	
	E	Diesel	D	D	D	B	-	-
		Dimethyl formamide	B	B	D	D	A	D
	F	Ethanol (ethyl alcohol)	A	B	D	B	A	A
		Ether	C	D	D	C	D	-
		Ethyl acetate	B	D	D	D	D	D
		Ethyl bromide	D	D	D	D	C	-
		Ethyl chloride	C	D	D	D	D	A
		Ethylamine	D	C	D	D	B	-
		Ethylene chlorhydrin	A	B	D	B	A	A
		Ethylene dichloride	C	D	D	D	D	B
		Ethylene glycol	A	A	A	A	A	A
		Ethylene oxide	A	D	A	A	A	D
	G	Fatty acids	C	B	B	C	C	C
		Ferric chloride 40% in W.	A	A	A	A	A	B
Ferric sulfate 5% in W.		A	A	A	A	A	A	
Ferrous chloride 43% in W.		A	A	A	A	A	-	
Ferrous sulfate 5% in W.		A	A	A	A	A	-	
Fluoboric acid, 10% in W.		D	D	A	A	A	-	
Fluoroborate salts		A	-	A	A	A	-	
Fluosilicic acid		C	B	D	B	A	-	
Formaldehyde, 37% in W.		D	C	D	D	C	D	
Formic acid, 25% in W.		A	A	A	C	A	D	
H	Freon 11	A	A	A	A	-	-	
	Fruit juice	A	A	A	A	A	A	
	Gasoline, high-aromatic	D	D	D	B	D	A	
	Gasoline, non-aromatic	D	D	D	B	D	A	
	Glycerin	A	A	A	A	A	A	
	Hydrobromic acid, 20-50%	D	D	A	A	A	A	
	Hydrochloric acid, 10% in W.	A	D	A	A	A	A	
	Hydrochloric acid, 37% in W.	B	D	A	D	A	B	

	Chemical	P	S	T	TU	TK	V
H	Hydrocyanic acid	A	A	A	A	A	A
	Hydrofluoric acid, 10% in W.	D	D	C	A	A	B
	Hydrofluoric acid, 50%	D	D	D	D	A	A
	Hydrogen peroxide, 10% in W.	A	A	A	A	A	A
	Hydrogen peroxide, 90% in W.	B	C	D	D	B	-
	Hydroiodic acid	B	B	A	A	A	-
	Hypochlorous acid, 25% in W	A	A	A	A	A	A
I	Iodine solutions	A	C	A	A	A	-
K	Ketones	D	D	D	D	C	-
L	Lactic acid, 10% in W.	A	A	A	A	A	-
	Lactic acid, 85% in W.	B	D	D	D	-	-
	Lead acetate, 35% in W.	A	A	A	A	A	-
M	Manganese salts	A	A	A	A	A	-
	Magnesium chloride, 35% in W.	A	A	A	A	A	A
	Magnesium sulfate, 25% in W.	A	A	A	A	A	-
	Mercury salts	A	A	A	A	A	-
	Methane	A	-	A	A	A	A
	Methanol	A	B	D	B	A	D
	Methyl Ethyl Ketone	D	D	D	D	C	D
	Monoethanolamine	C	D	D	D	D	D
N	Naphtha	D	D	D	D	D	A
	Nickel salts	A	A	A	A	A	-
	Nitric acid, 10% in W.	A	C	A	D	A	A
	Nitric acid, 35% in W.	A	D	A	D	A	A
	Nitric acid, 68-71% in W.	D	D	D	D	D	-
	Nitrobenzene	D	D	D	D	C	-
	Nitrous acid, 10% in W.	A	B	A	C	A	-
O	Oils, animal	C	A	D	A	B	-
	Oils, mineral	D	D	C	A	D	A
	Oleic acid	C	B	D	B	D	B
P	Perchloric acid, 67% in W.	A	D	C	D	A	A
	Perchloroethylene	C	D	D	D	D	A
	Phenol, 91% in W.	A	D	D	C	A	-
	Phosphoric acid 25% in W.	A	D	A	A	A	A
	Phthalic acid, 9% in Alc.	A	B	D	C	B	-
	Potassium carbonate, 55% in W.	A	A	A	A	A	-
	Potassium cyanide, 33% in W.	A	A	A	A	-	-
	Potassium hydroxide, <10% in W.	A	A	A	D	-	B
	Potassium iodide, 56% in W.	A	A	A	A	A	-

	Chemical	P	S	T	TU	TK	V
	Propanol (propyl alcohol)	C	A	D	D	A	B
	Pyridine	C	D	D	D	C	D
S	Silicone oils	C	D	B	A	B	A
	Silver nitrate, 55% in W.	A	A	A	A	A	A
	Soap solutions	B	A	A	A	A	A
	Sodium bicarbonate, 7% in W.	A	A	A	A	A	A
	Sodium bisulfate	A	-	A	A	A	-
	Sodium borate	A	A	A	A	A	A
	Sodium carbonate	A	A	A	A	A	B
	Sodium ferrocyanide	A	A	A	D	-	-
	Sodium hydrosulfite	A	-	A	A	A	-
	Sodium hydroxide, 10-15% in W.	A	A	A	D	A	B
	Sodium hydroxide, 30-40% in W.	A	C	C	D	A	B
	Sodium nitrate, 3.5% in W.	A	A	A	A	A	-
	Sodium sulfate, 3.6% in W.	A	A	A	A	-	A
	Sodium sulfide, 13% in W.	A	A	A	A	A	-
	Stearic acid, 5% in Alc.	C	D	D	B	B	-
	Sulfuric acid, 10% in W.	A	A	A	B	A	A
	Sulfuric acid, 30% in W.	A	B	A	B	A	A
	Sulfuric acid, 95-98% in W.	D	D	D	D	C	A
	Sulfurous acid	A	A	A	A	A	A
T	Tannic acid, 75% in W.	B	A	B	D	A	-
	Tartaric acid, 56% in W.	A	A	A	A	A	A
	Tin salts	A	A	A	A	A	-
	Toluene (toluol)	D	D	D	D	C	A
	Trichloroacetic acid, 90% in W.	B	D	A	D	A	C
	Trichlorethylene	C	D	D	D	C	A
	Trisodium phosphate	A	A	A	A	A	A
	Turpentine	D	D	D	B	A	A
U	Urea, 20% in W.	A	A	A	A	A	-
	Uric acid	A	A	A	C	A	-
X	Xylene	D	D	D	D	C	B
Z	Zinc chloride, 80% in W.	A	A	A	A	A	A

Tubing:

- P = PharMed®
- S = Silicone
- T = Tygon® standard
- TU = Tygon® for hydrocarbons
- TK = Tygon® 2001 for food
- V = Viton®

Resistance:

- A = excellent
- B = good
- C = conditional
- D = unsuitable
- = not tested

Please note: All information is provided without guarantee. The user must ensure that the tubing is suitable for the desired application; appropriate tests may have to be carried out.

in W.: in Water

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WARNING

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