

## VWR<sup>®</sup> FOR BATHS, THERMOSTATS AND CIRCULATORS

Block heaters and hotplates

Thermostats

Heating/cooling circulators

Accessories



Everyday reliable performance

# BATHS, THERMOSTATS AND CIRCULATORS

**We hope that you will notice several things about the VWR range of baths, thermostats and circulators**

**Choice** – enough to cover almost every application packed into a series of models without being overwhelming

**Performance** – market leading consistency and reliability backed up with warranties that run for many years

**Value for money** – well built products that last and don't cost a fortune to buy

## CONTENTS

### Block heaters and accessories

Block heaters .....	3
Hotplates and magnetic hotplate stirrers .....	13

### Baths and accessories

Water baths .....	21
Shaking water baths .....	22
Ultrasonic baths .....	23

### Temperature control

Thermostats .....	30
Baths for thermostats .....	31
Heating circulators .....	34
Heating and cooling circulators .....	35
Refrigerating circulators .....	36
Speciality baths .....	39

### Helpful accessories and servicing/calibration

Aquaresist and anti-evaporation spheres for water baths .....	42
Thermometers .....	42
Racks specifically for water baths and lead weights .....	44
VWR chemicals silicone bath fluids .....	45

## SYMBOLS



RS232 interface



Autoclavable



Warranty



USB connection



Hazard analysis and critical control points



CE marking conforms with IVD MDD 98/79 EC



Ethernet interface

## Digital mini block heaters



EU/CH:460-0334 / UK: 460-0335



EU/CH: 460-0336 / UK: 460-0337

These mini block heaters are ideal for applications that require accurate and repeatable results. These personal sized units take up minimal bench space. Choice of model with or without heated lid. Units are ideal for immunoassays, ELISA, LAMP assays, enzyme reactions, denaturations and blood banking.

- LED display for temperature and time
- Temperature range from ambient +5 to 100 °C
- Temperature accuracy:  $\pm 0,5$  °C (models with heated lid:  $\pm 0,3$  °C)
- Microprocessor controlled with temperature calibration via external thermometer or temperature device
- Timer range: 1 s to 160 h, or continuous mode
- Heated lid helps to reduce condensation within sample tube
- Accommodate interchangeable mini heating blocks for tubes from 0,2 up to 50 ml capacity

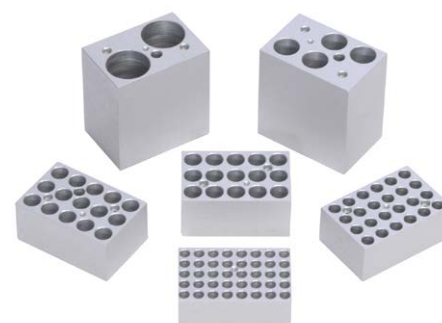
**Accessories information:** Blocks for 15 and 50 ml tubes (460-0342 and 462-0343) can not be used with the mini block heater with a heated lid.

**Ordering information:** Heating blocks are not included, please order these separately.

\*\* EU/CH-plug \*\*\* UK-plug

Type	No. of blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	WxDxH (mm)	Weight (kg)	Pk	Cat. No.
Mini block heater**	1	Ambient +5...100	$\pm 0,2$	0,075	127x160x123	1,3	1	460-0334
Mini block heater***	1	Ambient +5...100	$\pm 0,2$	0,075	127x160x123	1,3	1	460-0335
Mini block heater with heated lid**	1	Ambient +5...100	$\pm 0,2$	0,075	127x160x123	1,3	1	460-0336
Mini block heater with heated lid***	1	Ambient +5...100	$\pm 0,2$	0,075	127x160x123	1,3	1	460-0337

Description	For	Pk	Cat. No.
<b>Blocks</b>			
Mini block without thermometer well	0,2 ml tubes	1	460-0338
Mini block without thermometer well	0,5 ml tubes	1	460-0339
Mini block with thermometer well	1,5 ml tubes	1	460-0340
Mini block without thermometer well	2,0 ml tubes	1	460-0341
Mini block with thermometer well, not suitable for use with mini block heaters with heated lid	15 ml tubes	1	460-0342
Mini block with thermometer well, not suitable for use with mini block heaters with heated lid	50 ml tubes	1	460-0343





## Block heaters, analogue



These multipurpose units are ideal for incubation and activation of cultures, enzyme reactions, blood urea nitrogen determinations, immunoassays, melting or boiling points. Two separate temperature adjustment knobs provide low and high temperature control. Low range knob adjusts from above ambient to 100 °C and high range knob adjusts from 75 to 150 °C. High wattage, constant temperature dry block heaters are economical, versatile and compact. Each of the five models accepts separate, interchangeable, modular heating blocks, which accommodate various sample containers such as microtubes, centrifuge tubes, vials, microplates and PCR strips or tubes.

- Multipurpose device for a wide range of applications
- Temperature range from ambient +5 to 150 °C
- Accommodate VWR® interchangeable modular heating blocks for tubes from 0,2 ml up to 50 ml capacity
- Analogue controls

**Ordering information:** Heating blocks are not included, please order these separately.

Type	No. of blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	WxDxH (mm)	Weight (kg)	Pk	Cat. No.
Block heater, analogue	1 **	RT* +5...150	±1,5	0,11	203×315×89	2,6	1	460-3249
Block heater, analogue	1 ***	RT* +5...150	±1,5	0,11	203×315×89	2,6	1	460-3250
Block heater, analogue	1 ****	RT* +5...150	±1,5	0,11	203×315×89	2,6	1	460-3251
Block heater, analogue	2 **	RT* +5...150	±2,0	0,21	203×391×89	2,9	1	460-3252
Block heater, analogue	2 ***	RT* +5...150	±2,0	0,21	203×391×89	2,9	1	460-3253
Block heater, analogue	2 ****	RT* +5...150	±2,0	0,21	203×391×89	2,9	1	460-3254
Block heater, analogue	3 **	RT* +5...150	±2,0	0,21	203×467×89	3,6	1	460-3255
Block heater, analogue	3 ***	RT* +5...150	±2,0	0,21	203×467×89	3,6	1	460-3256
Block heater, analogue	3 ****	RT* +5...150	±2,0	0,21	203×467×89	3,6	1	460-3257
Block heater, analogue	4 **	RT* +5...150	±2,5	0,31	203×429×89	3,9	1	460-3258
Block heater, analogue	4 ***	RT* +5...150	±2,5	0,31	203×429×89	3,9	1	460-3259
Block heater, analogue	4 ****	RT* +5...150	±2,5	0,31	203×429×89	3,9	1	460-3260
Block heater, analogue	6 **	RT* +5...150	±2,5	0,41	203×531×89	4,5	1	460-3261
Block heater, analogue	6 ***	RT* +5...150	±2,5	0,41	203×531×89	4,5	1	460-3262
Block heater, analogue	6 ****	RT* +5...150	±2,5	0,41	203×531×89	4,5	1	460-3263

Description	For	Pk	Cat. No.
<b>Blocks for microcentrifuge tubes</b>			
Single block	Round bottomed tubes, 6 mm Ø	1	460-3234
Single block	0,5 ml PCR tubes	1	460-3211
Single block	1,5 ml VWR microtubes	1	460-3235
Single block	1,5 ml Eppendorf microtubes	1	460-3212
Single block	2,0 ml VWR/Eppendorf microtubes	1	460-3245
Single block	2,0 ml Corning microtubes	1	460-3246
<b>Blocks for conical bottom centrifuge tubes</b>			
Single block	15 ml conical tubes	1	460-3221
Single block	50 ml conical tubes	1	460-3223
<b>Blocks for standard test tubes</b>			
Single block	6 mm round bottom tubes	1	460-3213
Single block	10 mm round bottom tubes	1	460-3214
Single block	12/13 mm round bottom tubes	1	460-3215
Single block	12/13 mm round bottom tubes	1	460-3216
Single block	15/16 mm round bottom tubes	1	460-3217
Single block	20 mm round bottom tubes	1	460-3218
Single block	25 mm round bottom tubes	1	460-3219
Single block	35 mm round bottom tubes	1	460-3222
Single block	17/18 mm round bottom tubes	1	460-3243
<b>Combination blocks, designed for variable sample sizes</b>			
Single block, microtube combination 0,5 ml, 1,5 ml, 2,0 ml		1	460-3248
Single block, centrifuge tube combination 1,5 ml, 15 ml, 50 ml		1	460-3247
Single block, test tube combination 6 mm, 12/13 mm, 25 mm		1	460-3220
<b>Blocks for vials, designed for sample/serum and scintillation vials</b>			
Single block	12 mm vials	1	460-3279
Single block	15 mm vials	1	460-3280
Single block	16 mm vials	1	460-3287
Single block	17 mm vials	1	460-3281
Single block	19 mm vials	1	460-3282
Single block	21 mm vials	1	460-3283

Description	For	Pk	Cat. No.
<b>Blocks for vials, designed for sample/serum and scintillation vials</b>			
Single block	23 mm vials	1	460-3284
Single block	25 mm vials	1	460-3285
Single block	28 mm vials	1	460-3286
<b>Solid blocks</b>			
Single block		1	460-3236
Double block		1	460-3239
<b>Blocks for PCR – plates, tubes, strips</b>			
Double block, 1x96-well PCR plate	0,2 ml tubes	1	460-3226
Single block, 10x8-PCR tube strips	0,2 ml tubes	1	460-3224
Single block, 64x individual PCR tubes	0,2 ml tubes	1	460-3225
<b>Stainless steel sand baths</b>			
Sand bath for one-block heater		1	460-3227
Sand bath for two-block heater		1	460-3228
Sand bath for three-block heater		1	460-3229
Sand bath for four-block heater		1	460-3230
Sand bath for six-block heater		1	460-3231
Sand for sand bath	450 g		460-3232
Stainless steel shot for sand bath	450 g		460-3233
<b>Low temperature covers</b>			
2-Block cover, max. tube height 89 mm		1	460-3240
2-Block cover, max. tube height 206 mm		1	460-3289
4-Block cover, max. tube height 89 mm		1	460-3241
6-Block cover, max. tube height 89 mm		1	460-3242

\* RT = Ambient

\*\* EU-plug \*\*\* UK-plug \*\*\*\* CH-plug

## Block heaters, digital



Designed for applications that require repeatable results and superior temperature stability. These multipurpose units are ideal for incubation and activation of cultures, enzyme reactions, blood/urea nitrogen determinations, immunoassays, melting or boiling points. Easy to use controls with independent LED displays show actual and set point temperatures. Controls allow users to adjust temperature set point in  $\pm 0,1$  °C increments. Timer function with audible alarm when time reaches zero. Optional external temperature probe kit monitors actual block or sample temperature. LED display on front panel will show actual probe temperature and adjust heater output to maintain user-defined set point. All dry block heaters include a built-in support rod holder for mounting the probe kit. Efficient heater features close tube-to-block contact with a low density design for exceptional temperature uniformity.

- Exceptional temperature uniformity and stability. Units offer a temperature stability of  $\pm 0,2$  °C
- Temperature range from ambient +5 to 120 °C
- Timer will display elapsed time or when programmed to user-defined limit, will count down to zero and shut off unit
- Accommodates VWR® interchangeable modular heating blocks for tubes from 0,2 up to 50 ml capacity
- Two LED displays, timer with audible alarm and microprocessor control



**Ordering information:** Heating blocks are not included, please order these separately.

Type	No. of blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	WxDxH (mm)	Weight (kg)	Pk	Cat. No.
Block heater, digital	1 **	RT* +5...120	$\pm 0,2$	0,11	203x315x89	2,6	1	460-3264
Block heater, digital	1 ***	RT* +5...120	$\pm 0,2$	0,11	203x315x89	2,6	1	460-3265
Block heater, digital	1 ****	RT* +5...120	$\pm 0,2$	0,11	203x315x89	2,6	1	460-3266
Block heater, digital	2 **	RT* +5...120	$\pm 0,2$	0,21	203x391x89	2,9	1	460-3267
Block heater, digital	2 ***	RT* +5...120	$\pm 0,2$	0,21	203x391x89	2,9	1	460-3268
Block heater, digital	2 ****	RT* +5...120	$\pm 0,2$	0,21	203x391x89	2,9	1	460-3269
Block heater, digital	3 **	RT* +5...120	$\pm 0,2$	0,21	203x467x89	3,6	1	460-3270
Block heater, digital	3 ***	RT* +5...120	$\pm 0,2$	0,21	203x467x89	3,6	1	460-3271
Block heater, digital	3 ****	RT* +5...120	$\pm 0,2$	0,21	203x467x89	3,6	1	460-3272
Block heater, digital	4 **	RT* +5...120	$\pm 0,2$	0,31	203x429x89	3,9	1	460-3273
Block heater, digital	4 ***	RT* +5...120	$\pm 0,2$	0,31	203x429x89	3,9	1	460-3274

## Block heaters and accessories

Type	No. of blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	WxDxH (mm)	Weight (kg)	Pk	Cat. No.
Block heater, digital	4 ****	RT* +5...120	±0,2	0,31	203×429×89	3,9	1	460-3275
Block heater, digital	6 **	RT* +5...120	±0,2	0,41	203×531×89	4,5	1	460-3276
Block heater, digital	6 ***	RT* +5...120	±0,2	0,41	203×531×89	4,5	1	460-3277
Block heater, digital	6 ****	RT* +5...120	±0,2	0,41	203×531×89	4,5	1	460-3278

Description	For	Pk	Cat. No.
<b>Blocks for microcentrifuge tubes</b>			
Single block	Round bottomed tubes, 6 mm Ø	1	460-3234
<b>Accessories</b>			
External temperature probe kit. Kit includes stainless steel RTD probe, 457 mm vertical support rod, thermometer/probe extension clamp and hook connector.		1	460-3288
<b>Blocks for microcentrifuge tubes</b>			
Single block	0,5 ml PCR tubes	1	460-3211
Single block	1,5 ml VWR microtubes	1	460-3235
Single block	1,5 ml Eppendorf microtubes	1	460-3212
Single block	2,0 ml VWR/Eppendorf microtubes	1	460-3245
Single block	2,0 ml Corning microtubes	1	460-3246
<b>Blocks for conical bottom centrifuge tubes</b>			
Single block	15 ml conical tubes	1	460-3221
Single block	50 ml conical tubes	1	460-3223
<b>Blocks for standard test tubes</b>			
Single block	6 mm round bottom tubes	1	460-3213
Single block	10 mm round bottom tubes	1	460-3214
Single block	12/13 mm round bottom tubes	1	460-3215
Single block	12/13 mm round bottom tubes	1	460-3216
Single block	15/16 mm round bottom tubes	1	460-3217
Single block	20 mm round bottom tubes	1	460-3218
Single block	25 mm round bottom tubes	1	460-3219
Single block	35 mm round bottom tubes	1	460-3222
Single block	17/18 mm round bottom tubes	1	460-3243
<b>Combination blocks, designed for variable sample sizes</b>			
Single block, microtube combination 0,5 ml, 1,5 ml, 2,0 ml		1	460-3248
Single block, centrifuge tube combination 1,5 ml, 15 ml, 50 ml		1	460-3247
Single block, test tube combination 6 mm, 12/13 mm, 25 mm		1	460-3220
<b>Blocks for vials, designed for sample/serum and scintillation vials</b>			
Single block	12 mm vials	1	460-3279
Single block	15 mm vials	1	460-3280
Single block	16 mm vials	1	460-3287
Single block	17 mm vials	1	460-3281
Single block	19 mm vials	1	460-3282
Single block	21 mm vials	1	460-3283
Single block	23 mm vials	1	460-3284
Single block	25 mm vials	1	460-3285
Single block	28 mm vials	1	460-3286
<b>Solid blocks</b>			
Single block		1	460-3236
Double block		1	460-3239
<b>Blocks for microtitre plates</b>			
Double block	96- or 384-well plate	1	460-3238
<b>Blocks for PCR – plates, tubes, strips</b>			
Double block, 1×96-well PCR plate	0,2 ml tubes	1	460-3226
Single block, 10×8-PCR tube strips	0,2 ml tubes	1	460-3224
Single block, 64×individual PCR tubes	0,2 ml tubes	1	460-3225
<b>Blocks for cuvettes</b>			
Single block, 2×6 cuvettes (12,5 mm)		1	460-3237
<b>Stainless steel sand baths</b>			
Sand bath for one-block heater		1	460-3227
Sand bath for two-block heater		1	460-3228
Sand bath for three-block heater		1	460-3229
Sand bath for four-block heater		1	460-3230
Sand bath for six-block heater		1	460-3231
Sand for sand bath		450 g	460-3232
Stainless steel shot for sand bath		450 g	460-3233
<b>Low temperature covers</b>			
2-Block cover, max. tube height 89 mm		1	460-3240
2-Block cover, max. tube height 206 mm		1	460-3289
4-Block cover, max. tube height 89 mm		1	460-3241
6-Block cover, max. tube height 89 mm		1	460-3242

\*RT = Ambient

\*\* EU-plug \*\*\* UK-plug \*\*\*\*CH-plug



## Dry block heater, Advanced, digital, with heated lid



This advanced dry block heater with heated lid is designed for applications that require repeatable results and superior temperature stability. This multipurpose unit is ideal for isothermal incubation, enzyme reactions, immunoassays, nucleic acid denaturation and a wide variety of other laboratory procedures. Integral support rod holder with locking knob accepts optional external temperature probe kit. Block heater accepts one microplate block or two separate interchangeable modular blocks. Each block has a thermometer well for measuring block temperature. Efficient heating due to close tube and block contact with a low density design for exceptional temperature uniformity. The heated lid helps to regulate the temperature. PID temperature control, with optional external RTD probe.

Samples are heated to temperature quickly and accurately. Temperature is adjusted in  $\pm 0,1$  °C increments. Touch pad controls with easy to read, independent LED displays for temperature and time, also show set point and actual temperature. Display will show last used settings, even after power has been turned off. In timed mode, an alarm will sound when time reaches zero and when unit reaches set point temperature. Temperature calibration mode allows the user to calibrate the unit to an external temperature device. Hot warning symbol light is illuminated when the temperature is above 40 °C. Over shoot protection means if the unit exceeds the set temperature by 10 °C the unit will automatically stop heating. Units can be run in environments from 18 to 33 °C (20 to 80% relative humidity, non condensing).

- Exceptional uniformity, stability and regulation of temperature, offers temperature stability and temperature uniformity at 37 °C of  $\pm 0,2$  °C within the block and  $\pm 0,1$  °C across similar blocks
- Temperature range from ambient +5 to 100 °C, heat up time to 100 °C is 50 min
- Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero
- Heated lid reduces condensation on sample lids
- Optional external temperature probe kit monitors actual block or sample temperature
- Accommodates VWR interchangeable modular heating blocks for tubes from 0,2 ml microtubes to test tubes or vials up to 85 mm in height

**Ordering information:** Modular blocks and optional temperature probe kit available, these must be ordered separately.

Type	No. of blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	WxDxH (mm)	Weight (kg)	Pk	Cat. No.
Block heater, digital	2	RT* +5...100	$\pm 0,2$	0,4	203x391x178	2,7	1	460-0183
Block heater, digital	2 ***	RT* +5...100	$\pm 0,2$	0,4	203x391x178	2,7	1	460-0184
Block heater, digital	2 ****	RT* +5...100	$\pm 0,2$	0,4	203x391x178	2,7	1	460-0185

Description	For	Pk	Cat. No.
<b>Blocks for microcentrifuge tubes</b>			
Single block	Round bottomed tubes, 6 mm Ø	1	460-3234
<b>Accessories</b>			
External temperature probe kit. Kit includes stainless steel RTD probe, 457 mm vertical support rod, thermometer/probe extension clamp and hook connector.		1	460-3288
<b>Blocks for microcentrifuge tubes</b>			
Single block	0,5 ml PCR tubes	1	460-3211
Single block	1,5 ml VWR microtubes	1	460-3235
Single block	1,5 ml Eppendorf microtubes	1	460-3212
Single block	2,0 ml VWR/Eppendorf microtubes	1	460-3245
Single block	2,0 ml Corning microtubes	1	460-3246
<b>Blocks for conical bottom centrifuge tubes</b>			
Single block	15 ml conical tubes	1	460-3221
Single block	50 ml conical tubes	1	460-3223
<b>Blocks for standard test tubes</b>			
Single block	6 mm round bottom tubes	1	460-3213
Single block	10 mm round bottom tubes	1	460-3214
Single block	12/13 mm round bottom tubes	1	460-3215
Single block	12/13 mm round bottom tubes	1	460-3216
Single block	15/16 mm round bottom tubes	1	460-3217
Single block	20 mm round bottom tubes	1	460-3218

Description	For	Pk	Cat. No.
<b>Blocks for standard test tubes</b>			
Single block	25 mm round bottom tubes	1	460-3219
Single block	35 mm round bottom tubes	1	460-3222
Single block	17/18 mm round bottom tubes	1	460-3243
<b>Combination blocks, designed for variable sample sizes</b>			
Single block, microtube combination 0,5 ml, 1,5 ml, 2,0 ml		1	460-3248
Single block, centrifuge tube combination 1,5 ml, 15 ml, 50 ml		1	460-3247
Single block, test tube combination 6 mm, 12/13 mm, 25 mm		1	460-3220
<b>Blocks for vials, designed for sample/serum and scintillation vials</b>			
Single block	12 mm vials	1	460-3279
Single block	15 mm vials	1	460-3280
Single block	16 mm vials	1	460-3287
Single block	17 mm vials	1	460-3281
Single block	19 mm vials	1	460-3282
Single block	21 mm vials	1	460-3283
Single block	23 mm vials	1	460-3284
Single block	25 mm vials	1	460-3285
Single block	28 mm vials	1	460-3286
<b>Solid blocks</b>			
Single block		1	460-3236
Double block		1	460-3239
<b>Blocks for microtitre plates</b>			
Double block	96- or 384-well plate	1	460-3238
<b>Blocks for PCR – plates, tubes, strips</b>			
Double block, 1x96-well PCR plate	0,2 ml tubes	1	460-3226
Single block, 10x8-PCR tube strips	0,2 ml tubes	1	460-3224
Single block, 64xindividual PCR tubes	0,2 ml tubes	1	460-3225
<b>Blocks for cuvettes</b>			
Single block, 2x6 cuvettes (12,5 mm)		1	460-3237
<b>Stainless steel sand baths</b>			
Sand bath for one-block heater		1	460-3227
Sand bath for two-block heater		1	460-3228
Sand bath for three-block heater		1	460-3229
Sand bath for four-block heater		1	460-3230
Sand bath for six-block heater		1	460-3231
Sand for sand bath		450 g	460-3232
Stainless steel shot for sand bath		450 g	460-3233

\*RT = Ambient

\*\* EU-plug \*\*\* UK-plug \*\*\*\*CH-plug



## Modular heating blocks and accessories for VWR® block heaters

Constructed from a solid anodised aluminium block.

- Close contact of tubes to block walls allows for maximum heat transfer
- Each block has a thermometer well for measuring block temperature

Single block WxDxH: 95x76x51 mm

Double block WxDxH: 95x152x57 mm



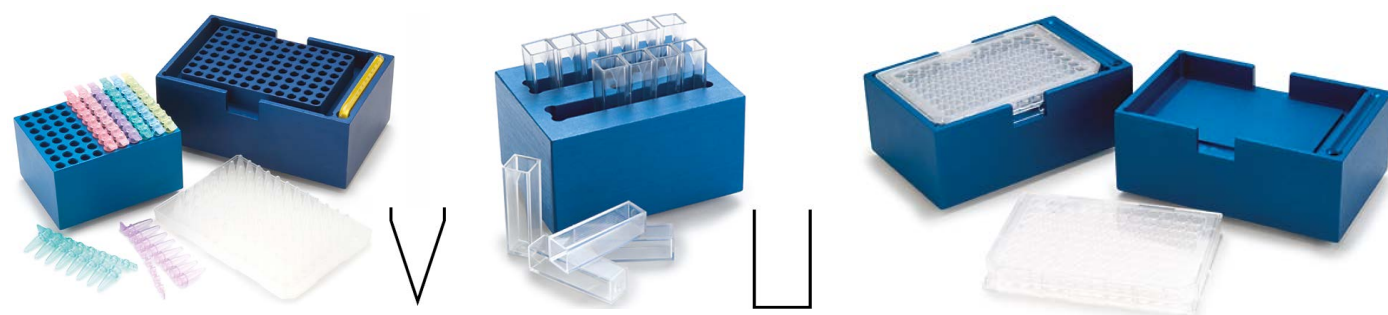
Description	Well size (mm)	For	No. of holes	Depth (mm)	WxDxH (mm)	Pk	Cat. No.
<b>Blocks for microcentrifuge tubes</b>							
Single block	Ø 6,3	Round bottomed tubes, 6 mm Ø	30	27	95x76x51	1	460-3234
Single block	Ø 7,9	0,5 ml PCR tubes	30	27,6	95x76x51	1	460-3211
Single block	Ø 11,1	1,5 ml VWR microtubes	20	39,1	95x76x51	1	460-3235
Single block	Ø 11,5	1,5 ml Eppendorf microtubes	20	36,9	95x76x51	1	460-3212
Single block	Ø 11,5	2,0 ml VWR/Eppendorf microtubes	20	38,1	95x76x51	1	460-3245
Single block	Ø 10,9	2,0 ml Corning microtubes	20	38,1	95x76x51	1	460-3246
<b>Blocks for conical bottom centrifuge tubes</b>							
Single block	Ø 17,1	15 ml conical tubes	12	44,5	95x76x51	1	460-3221
Single block	Ø 29,0	50 ml conical tubes	5	47,6	95x76x51	1	460-3223

## Modular heating blocks and accessories for VWR block heaters



Description	Well size (mm)	For	No. of holes	Depth (mm)	WxDxH (mm)	Pk	Cat. No.
<b>Blocks for standard test tubes</b>							
Single block	Ø 8,3	6 mm round bottom tubes	30	48,4	95x76x51	1	460-3213
Single block	Ø 10,7	10 mm round bottom tubes	24	48,4	95x76x51	1	460-3214
Single block	Ø 13,9	12/13 mm round bottom tubes	16	48,4	95x76x51	1	460-3215
Single block	Ø 13,9	12/13 mm round bottom tubes	20	48,4	95x76x51	1	460-3216
Single block	Ø 17,5	15/16 mm round bottom tubes	12	48,4	95x76x51	1	460-3217
Single block	Ø 21,0	20 mm round bottom tubes	8	48,4	95x76x51	1	460-3218
Single block	Ø 26,2	25 mm round bottom tubes	6	48,4	95x76x51	1	460-3219
Single block	Ø 35,0	35 mm round bottom tubes	4	47,6	95x76x51	1	460-3222
Single block	Ø 19,1	17/18 mm round bottom tubes	12	48,4	95x76x51	1	460-3243
<b>Combination blocks, designed for variable sample sizes</b>							
Single block, microtube combination 0,5 ml, 1,5 ml, 2,0 ml	Ø 7,9 / Ø 11,1 / Ø 11,5		6/10/5	27,6/39,1/38,1	95x76x51	1	460-3248
Single block, centrifuge tube combination 1,5 ml, 15 ml, 50 ml	Ø 11,1 / Ø 17,1 / Ø 29,0		4/3/2	39,1/44,5/47,6	95x76x51	1	460-3247
Single block, test tube combination 6 mm, 12/13 mm, 25 mm	Ø 8,3 / Ø 13,9 / Ø 26,2		6/5/3	48,4/48,4/48,4	95x76x51	1	460-3220
<b>Blocks for vials, designed for sample/serum and scintillation vials</b>							
Single block	Ø 12,7	12 mm vials	20	30,0	95x76x51	1	460-3279
Single block	Ø 15,8	15 mm vials	20	35,0	95x76x51	1	460-3280
Single block	Ø 16,4	16 mm vials	15	45,0	95x76x51	1	460-3287
Single block	Ø 17,8	17 mm vials	12	45,0	95x76x51	1	460-3281
Single block	Ø 19,7	19 mm vials	12	45,0	95x76x51	1	460-3282
Single block	Ø 21,7	21 mm vials	9	45,0	95x76x51	1	460-3283
Single block	Ø 23,8	23 mm vials	8	45,0	95x76x51	1	460-3284
Single block	Ø 25,8	25 mm vials	8	45,0	95x76x51	1	460-3285
Single block	Ø 28,8	28 mm vials	6	45,0	95x76x51	1	460-3286

## Accessories for VWR block heaters



### Solid blocks

- For use as a low temperature hotplate or for custom drilling

### Blocks for microtitre plates

- Recessed well for better stability; flat surface is good for flat and round bottom plates. Fits 2/4/6 block heaters

### Blocks for PCR – plates, tubes, strips

- Tapered tube wells for 0,2 ml tubes. Spaced for easy access and removal

### Blocks for cuvettes

- Two parallel slots fit 6 cuvettes in each slot, side by side for excellent stability and heat transfer

## Block heaters and accessories

Description	Well size (mm)	For	No. of holes	Depth (mm)	WxDxH (mm)	Pk	Cat. No.
<b>Solid blocks</b>							
Single block					95x76x51	1	460-3236
Double block					95x152x57	1	460-3239
<b>Blocks for microtitre plates</b>							
Double block	-	96- or 384-well plate	-	13,5	95x152x57	1	460-3238
<b>Blocks for PCR – plates, tubes, strips</b>							
Double block, 1x96-well PCR plate	Ø 6,4	0,2 ml tubes	83	15,5	95x152x57	1	460-3226
Single block, 10x8-PCR tube strips	Ø 6,4	0,2 ml tubes	80	15,5	95x76x51	1	460-3224
Single block, 64x individual PCR tubes	Ø 6,4	0,2 ml tubes	82	20,2	95x76x51	1	460-3225
<b>Blocks for cuvettes</b>							
Single block, 2x6 cuvettes (12,5 mm)	-		-	25,4	95x76x51	1	460-3237



### Stainless steel sand baths

Ideal for irregular shaped vessels. Stainless steel construction for superior corrosion resistance. Designed to hold sand, stainless steel shot or non volatile liquids.

Description	WxDxH (mm)	Pk	Cat. No.
Sand bath for one-block heater	95x76x64	1	460-3227
Sand bath for two-block heater	95x149x64	1	460-3228
Sand bath for three-block heater	95x224x64	1	460-3229
Sand bath for four-block heater	147x191x64	1	460-3230
Sand bath for six-block heater	147x287x64	1	460-3231
Sand for sand bath		450 g	460-3232
Stainless steel shot for sand bath		450 g	460-3233

### Low temperature covers

Plexiglas® covers with 2 open sides reduce airflow, providing additional temperature stability in low temperature applications.



Description	WxDxH (mm)	Pk	Cat. No.
2-Block cover, max. tube height 89 mm	165x165x41	1	460-3240
2-Block cover, max. tube height 206 mm	165x165x114	1	460-3289
4-Block cover, max. tube height 89 mm	178x216x41	1	460-3241
6-Block cover, max. tube height 89 mm	178x316x41	1	460-3242



## Thermoshaker, Thermal Shake Touch



The Thermal Shake Touch is designed for applications that require consistent and precise results. With heating and shaking capabilities, the low profile unit uses interchangeable blocks to accommodate a wide variety of tubes and microplates. The LCD touch screen enables faster setting of temperature, speed and time, which can all be viewed at once. Display features on-screen help topics with operational tips. Touch screen is compatible with rubber gloves used in labs. Program control capabilities allow user-programmable operation for automated use and memory for five separate, 5-step programs. Adjustable temperature ramp rate feature separately defines the heating and cooling rates in increments of 0,5 °C/min.

Single point calibration mode for maximum temperature accuracy, the single point calibration procedure allows the user to calibrate up to 6 different defined temperatures. Constructed from a high quality heat and chemically resistant polymer so the housing remains cool to the touch throughout normal operating temperatures. Maximum temperature limiting function ensures the temperature will not exceed user-defined limits allowing control of temperature-sensitive samples. A hot top warning illuminates when the temperature reaches 40 °C and remains on until the unit is cooled below 40 °C. The unit's enhanced electronics and temperature sensor provide accurate, dependable temperature settings across the operating range from 5 to 35 °C, (maximum 80% relative humidity, non condensing). Applications include cell cultures, DNA, RNA and protein studies.

- Easy to use 109 mm colour LCD touch screen allows the user to save and visibly track progress through the live status bar for five user-defined programs, each with five individual steps
- Suitable for rapid heating, cooling and high speed shaking and a pulse mode feature, ideal for quick vortex applications
- Timer with audible alarm, 1 min to 99 h, 59 min, heat function will automatically shut off if the unit recognises an internal issue
- USB port can transfer information to a flash drive for data logging, programme storage and software updates

**Delivery information:** Supplied with 1,5 ml block (460-0210), a rack and a cover, additional blocks must be ordered separately. Note that Eppendorf Thermomixer R® blocks are compatible with the VWR Thermal Shake Touch. Model with NIST traceable certificate is also available, this includes a 3-point NIST traceable calibration. The traceable certificate includes actual calibration measurement data and uncertainty. The calibration laboratory is ISO/IEC 17025 compliant.

Heating speed (°C/min)	5
Orbit (mm)	3
Speed accuracy (%)	±2
Speed range (min <sup>-1</sup> )	300 - 3000
Temperature accuracy (°C)	±1 (between 20 and 45 °C) ±2 (above 45 °C)
Temperature control range (°C)	RT* +4...100
Weight (kg)	4,6
WxDxH (mm)	248x260x132



Description	Pk	Cat. No.
Thermal Shake Touch, EU-plug	1	460-0202
Thermal Shake Touch, NIST certificate, EU-plug	1	460-0203
Thermal Shake Touch, UK-plug	1	460-0204
Thermal Shake Touch, NIST certificate, UK-plug	1	460-0205
Thermal Shake Touch, CH-plug	1	460-0206
Thermal Shake Touch, NIST certificate, CH-plug	1	460-0207

Description	Well size (mm)	For	No. of holes	Depth (mm)	Pk	Cat. No.
<b>Interchangeable blocks for Thermal Shake Touch and Cooling Thermal Shake Touch</b>						
Interchangeable thermal microplate block with lid	129x86	1x96 well microplate	1	25	1	460-0208
Interchangeable tube block	Ø 7,9	30x0,5 ml tubes**	30	25,7	1	460-0209
Interchangeable tube block	Ø 11,1	24x1,5 ml tubes**	24	33,5	1	460-0210
Interchangeable tube block	Ø 11,5	24x2,0 ml tubes**	24	33,5	1	460-0211
Interchangeable tube block	Ø 12,0	24x5 - 7 ml tubes	24	34,3	1	460-0212
Interchangeable tube block	Ø 12,6	24x2,0 ml cryo tubes	24	34,0	1	460-0213
Interchangeable tube block	Ø 17,3	9x15 ml conical tubes	9	102	1	460-0214
Interchangeable tube block	Ø 30,0	4x50 ml conical tubes	4	98,8	1	460-0215

\*RT = Ambient

\*\* Microtube blocks include a removable rack and cover.



## Thermoshaker, Cooling Thermal Shake Touch



The Cooling Thermal Shake Touch is designed for applications that require consistent and precise results. With heating, cooling and shaking capabilities, the low profile unit uses interchangeable blocks to accommodate a wide variety of tubes and microplates. The LCD touch screen enables faster setting of temperature, speed and time, which can all be viewed at once. Display features on-screen help topics with operational tips. Touch screen is compatible with rubber gloves used in labs. Program control capabilities allow user-programmable operation for automated use and memory for five separate, 5-step programs. Adjustable temperature ramp rate feature separately defines the heating and cooling rates in increments of 0,5 °C/min.

Single point calibration mode for maximum temperature accuracy, the single point calibration procedure allows the user to calibrate up to 6 different defined temperatures. Constructed from a high quality heat and chemical resistant polymer so the housing remains cool to the touch throughout normal operating temperatures. Maximum temperature limiting function ensures the temperature will not exceed user-defined limits allowing control of temperature-sensitive samples. A hot top warning illuminates when the temperature reaches 40 °C and remains on until the unit is cooled below 40 °C. The unit's enhanced electronics and dual temperature sensors provide accurate, dependable temperature settings across the operating range from 5 to 35 °C, (maximum 80% relative humidity, non condensing). Applications include cell cultures, DNA, RNA, hybridisation, and protein studies.

- Easy to use 109 mm colour LCD touch screen allows the user to save and visibly track progress through the live status bar for five user-defined programs, each with five individual steps
- Suitable for rapid heating, cooling and high speed shaking and a pulse mode feature, ideal for quick vortex applications
- Timer with audible alarm, 1 min to 99 h, 59 min, heat function will automatically shut off if the unit recognises an internal issue
- USB port can transfer information to a flash drive for data logging, programme storage and software updates

**Ordering information:** Supplied without blocks, blocks must be ordered separately. Note that Eppendorf Thermomixer R® blocks are compatible with the VWR Cooling Thermal Shake Touch. Model with NIST traceable certificate is also available, this includes a 3-point NIST traceable calibration. The traceable certificate includes actual calibration measurement data and uncertainty. The calibration laboratory is ISO/IEC 17025 compliant.

Model	Cooling Thermal Shake Touch
Cooling rate (°C/min)	Above ambient: 2 - 3 Below ambient: 0,5 - 1,0
Heating speed (°C/min)	5
Orbit (mm)	3
Speed accuracy (%)	±2
Speed range (min <sup>-1</sup> )	300 - 3000
Temperature accuracy (°C)	±0,5 (between 20 and 45 °C) ±2 (below 20 °C and above ambient)
Temperature control range (°C)	From 17 below ambient to 100
Weight (kg)	4,6
WxDxH (mm)	248x260x132

Description	Pk	Cat. No.
Cooling Thermal Shake Touch, EU-plug	1	460-0196
Cooling Thermal Shake Touch, UK-plug	1	460-0198
Cooling Thermal Shake Touch, CH-plug	1	460-0200
Cooling Thermal Shake Touch, NIST certificate, EU-plug	1	460-0197
Cooling Thermal Shake Touch, NIST certificate, UK-plug	1	460-0199
Cooling Thermal Shake Touch, NIST certificate, CH-plug	1	460-0201

Description	Well size (mm)	For	Depth (mm)	Pk	Cat. No.
<b>Interchangeable blocks for Thermal Shake Touch and Cooling Thermal Shake Touch</b>					
Interchangeable thermal microplate block with lid	129x86	1x96 well microplate	25	1	460-0208
Interchangeable tube block	Ø 7,9	30x0,5 ml tubes**	25,7	1	460-0209
Interchangeable tube block	Ø 11,1	24x1,5 ml tubes**	33,5	1	460-0210
Interchangeable tube block	Ø 11,5	24x2,0 ml tubes**	33,5	1	460-0211
Interchangeable tube block	Ø 12,0	24x5 - 7 ml tubes	34,3	1	460-0212
Interchangeable tube block	Ø 12,6	24x2,0 ml cryotubes	34,0	1	460-0213
Interchangeable tube block	Ø 17,3	9x15 ml conical tubes	102	1	460-0214
Interchangeable tube block	Ø 30,0	4x50 ml conical tubes	98,8	1	460-0215

\*\* Microtube blocks include a removable rack and cover.

## Thermoshaker, Thermal Shake *lite*



The combination of heating/cooling and shaking makes the Thermal Shake *lite* microtube shaking incubator ideal for many life science research applications in molecular biology, biochemistry and clinical chemistry. Its compact footprint incorporates an intuitive control panel with large multicolour display, allowing users to easily program and view temperature, time and speed settings.



- Choice of eight interchangeable aluminium blocks accommodate PCR plates and tubes ranging from 0,2 – 15 ml
- Fine tune speed control
- Rapid heating and cooling
- Compact footprint

**Ordering information:** Supplied without blocks, blocks must be ordered separately.

Model	Thermal Shake <i>lite</i>
Heating speed (°C/min)	6,5
Orbit (mm)	3
Speed range (min <sup>-1</sup> )	300 - 1500
Temperature accuracy (°C)	±0,5
Temperature control range (°C)	14 below ambient to 100
Weight (kg)	8,5
WxDxH (mm)	330x166x240

Description	Pk	Cat. No.
Thermal Shake <i>lite</i>	1	460-0249

Description	For	No. of holes	Pk	Cat. No.
<b>Accessories</b>				
Aluminium block	1,5 ml tubes	40	1	460-0250
Aluminium block	0,5 ml tubes	54	1	460-0251
Aluminium block	0,2 ml PCR tubes or plates	96	1	460-0252
Aluminium block	15 ml tubes	24	1	460-0253
Aluminium block	Water bath block (115x73x38 mm)		1	460-0254
Aluminium block	0,5 and 1,5 ml tubes	26+24	1	460-0255
Aluminium block	2,0 ml tubes	40	1	460-0256
Aluminium block	96-well ELISA plate	-	1	460-0257



## Hotplates, VHP-C series



Compact hotplates with a chemically resistant ceramic top. The elevated control panel minimises contact with spills and enables easy reading and adjustment of the temperature. Units feature a digital error code display and 'hot' top indicator to warn users that the surface is hot.

- VHP-C7 can be used with the VT-5 contact thermometer (442-0573), enabling precise temperature control
- Fixed safety circuit shuts off heater if temperature rises above 550 °C
- Microprocessor control sends feedback to the hotplate to maintain set temperature
- Digital display ensures accurate and repeatable temperature settings

IP protection class according to DIN EN 60529: IP 21

Type	Heating area (mm)	Temp. (°C)	Heating capacity (W)	Plate size (mm)	WxDxH (mm)	Pk	Cat. No.
VHP-C4, EU-plug	100x100	50...500	250	120x120	150x260x105	1	453-0050
VHP-C4, UK-plug	100x100	50...500	250	120x120	150x260x105	1	453-0053
VHP-C4, CH-plug	100x100	50...500	250	120x120	150x260x105	1	453-0056
VHP-C7, EU-plug	180x180	50...500	1000	200x200	220x330x105	1	453-0051
VHP-C7, UK-plug	180x180	50...500	1000	200x200	220x330x105	1	453-0054
VHP-C7, CH-plug	180x180	50...500	1000	200x200	220x330x105	1	453-0057

Description	Pk	Cat. No.
<b>Accessories</b>		
Support rod, stainless steel, length 450 mm, Ø 10 mm, for all stirrers with M10 thread	1	442-2041
R 350 Universal clamp for clamping flask necks, condensers, etc. up to 11 cm diameter	1	442-1133
Bosshhead clamp	1	442-2043
Extension cable, separates casing from the sensor, avoiding damage from vapours released by the medium	1	620-8104

## Hotplates, Advanced series



VWR Advanced hotplates deliver accurate and repeatable results. Units are microprocessor controlled and have an easy to read LED display for set point temperature. The control panel features easy to use controls which allow users to dial in adjustments for temperature. Rear housing features an off-centred, integral support rod holder with locking knob to accept the optional support rod and clamp kit. The low profile design takes up less space and fits into fume hoods.

A spill resistant housing channels fluids away from internal components. A 'hot' symbol warning light is illuminated when heat is turned on and remains on until top plate cools down. Enhanced electronics regulate heating and bring samples to temperature quickly and efficiently. Temperature measurement is controlled more accurately by using a resistance thermometer (RTD). Ceramic tops feature a chemically resistant, reflective white top plate surface that is easy to clean. Durable aluminium tops will not crack or chip, and provide a more even heating surface.



- Excellent temperature uniformity
- Microprocessor controlled with built-in memory allowing recall of last set temperature (even if unit has been turned off)
- Cool touch, chemically resistant housing
- LED display for temperature
- Choice of models with ceramic or aluminium top plates

**Ordering information:** Optional support rod kit is available which includes a 457 mm stainless steel support rod, thermometer/temperature probe extension clamp, 3-prong medium swivel clamp, and hook connector.

Type	Heating area (mm)	Temp. (°C)	Heating capacity (W)	WxDxH (mm)	Pk	Cat. No.
<b>Models with aluminium top plates</b>						
Hotplate, aluminium, EU-plug	100x100	RT* +5...400	350	167x274x108	1	444-0578
Hotplate, aluminium, UK-plug	100x100	RT* +5...400	350	167x274x108	1	444-0579
Hotplate, aluminium, CH-plug	100x100	RT* +5...400	350	167x274x108	1	444-0580
Hotplate, aluminium, EU-plug	180x180	RT* +5...400	1000	250x375x108	1	444-0584
Hotplate, aluminium, UK-plug	180x180	RT* +5...400	1000	250x375x108	1	444-0585
Hotplate, aluminium, CH-plug	180x180	RT* +5...400	1000	250x375x108	1	444-0586
Hotplate, aluminium, EU-plug	250x250	RT* +5...400	1550	330x455x108	1	444-0590
Hotplate, aluminium, UK-plug	250x250	RT* +5...400	1550	330x455x108	1	444-0591
Hotplate, aluminium, CH-plug	250x250	RT* +5...400	1550	330x455x108	1	444-0592

<b>Models with ceramic top plates</b>						
Hotplate, ceramic, EU-plug	100x100	RT* +5...500	350	167x274x108	1	444-0575
Hotplate, ceramic, UK-plug	100x100	RT* +5...500	350	167x274x108	1	444-0576
Hotplate, ceramic, CH-plug	100x100	RT* +5...500	350	167x274x108	1	444-0577
Hotplate, ceramic, EU-plug	180x180	RT* +5...500	1000	250x375x108	1	444-0581
Hotplate, ceramic, UK-plug	180x180	RT* +5...500	1000	250x375x108	1	444-0582
Hotplate, ceramic, CH-plug	180x180	RT* +5...500	1000	250x375x108	1	444-0583
Hotplate, ceramic, EU-plug	250x250	RT* +5...500	1550	330x455x108	1	444-0587
Hotplate, ceramic, UK-plug	250x250	RT* +5...500	1550	330x455x108	1	444-0588
Hotplate, ceramic, CH-plug	250x250	RT* +5...500	1550	330x455x108	1	444-0589

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Stirrer support rod clamping kit (rod, 2 clamps and hook connector)	444-0566, 444-0567, 444-0568, 444-0569, 444-0570, 444-0571, 444-0572, 444-0573, 444-0574, 444-0575, 444-0576, 444-0577, 444-0578, 444-0579, 444-0580, 444-0581, 444-0582, 444-0583, 444-0584, 444-0585, 444-0586, 444-0587, 444-0588, 444-0589, 444-0590, 444-0591, 444-0592, 444-0593, 444-0594, 444-0595, 444-0596, 444-0597, 444-0598, 444-0599, 444-0600, 444-0601, 444-0602, 444-0603, 444-0604, 444-0605, 444-0606, 444-0607, 444-0608, 444-0609, 444-0610	1	444-2844
Support plate for 100 mm stirrers and hotplate stirrers	444-0566, 444-0567, 444-0568, 444-0575, 444-0576, 444-0577, 444-0578, 444-0579, 444-0580, 444-0593, 444-0594, 444-0595, 444-0596, 444-0597, 444-0598	1	444-2851

\* RT= Ambient

## Hotplates, Professional series



VWR Professional hotplates are designed for applications that require exceptional accuracy, stability and repeatability. Enhanced microprocessor control offers an external resistance thermometer (RTD) probe option that delivers superior temperature control of the sample. Touch pad controls with easy to read, independent LED displays for temperature and time, allow operator to view all settings at once. Rear housing features an off-centred, built-in support rod holder with locking knob that accepts the supplied probe kit. Low profile design takes up less space and fits into fume hoods. Spill resistant housing channels fluids away from internal components. A 'hot' symbol warning light is illuminated when heat is turned on and remains on until the plate cools down. Plate over-temperature limit ensures plate temperature will never exceed users' programmed set temperature limit, allowing for control of sensitive flash points. An audible alarm will sound when time reaches zero or when unit reaches set point temperature in timed mode, and if the probe disengages from sample, unit will automatically shut off heater. Enhanced electronics regulate heating and bring samples to temperature quickly and efficiently. Ceramic tops feature a chemically resistant, reflective white top plate surface that's easy to clean. Durable aluminium tops will not crack or chip, and provide a more even heating surface.

- Excellent temperature uniformity
- Separate digital displays for temperature and time with indicators that toggle between actual and set point. Display will show last used settings, even after power has been turned off
- Cool touch, chemically resistant housing
- Includes external RTD temperature probe kit
- Choice of models with ceramic or aluminium top plates



**Delivery information:** Each unit is supplied complete with a 203 mm stainless steel PT1000 temperature probe, 457 mm stainless steel support rod, thermometer/temperature probe extension clamp and a hook connector.

Type	Heating area (mm)	Temp. (°C)	Heating capacity (W)	Plate size (mm)	WxDxH (mm)	Pk	Cat. No.
<b>Models with aluminium top plates</b>							
Hotplate, aluminium, EU-plug	180×180	RT* +5...400	1000	180×180	250×375×108	1	444-0620
Hotplate, aluminium, UK-plug	180×180	RT* +5...400	1000	180×180	250×375×108	1	444-0621
Hotplate, aluminium, CH-plug	180×180	RT* +5...400	1000	180×180	250×375×108	1	444-0622
Hotplate, aluminium, EU-plug	250×250	RT* +5...400	1550	250×250	330×455×108	1	444-0626
Hotplate, aluminium, UK-plug	250×250	RT* +5...400	1550	250×250	330×455×108	1	444-0627
Hotplate, aluminium, CH-plug	250×250	RT* +5...400	1550	250×250	330×455×108	1	444-0628
<b>Models with ceramic top plates</b>							
Hotplate, ceramic, EU-plug	180×180	RT* +5...500	1000	180×180	250×375×108	1	444-0617
Hotplate, ceramic, UK-plug	180×180	RT* +5...500	1000	180×180	250×375×108	1	444-0618
Hotplate, ceramic, CH-plug	180×180	RT* +5...500	1000	180×180	250×375×108	1	444-0619
Hotplate, ceramic, EU-plug	250×250	RT* +5...500	1550	250×250	330×455×108	1	444-0623
Hotplate, ceramic, UK-plug	250×250	RT* +5...500	1550	250×250	330×455×108	1	444-0624
Hotplate, ceramic, CH-plug	250×250	RT* +5...500	1550	250×250	330×455×108	1	444-0625

\* RT= Ambient



**VWR CATALYST**  
We Enable Science Through Services

Calibration and certification

Servicing and repairs

Maintenance contracts

Please visit us at: [vwr.com/vwrcatalyst](http://vwr.com/vwrcatalyst)

## Magnetic hotplate stirrers, VMS Advanced series



Compact stirrers with a ceramic glass plate, providing excellent chemical resistance. Units feature digital error code display, a 'hot' top indicator to warn users that surface is hot, a fixed safety circuit that shuts off the heater if temperature rises above 550 °C and there are three operating modes to choose from (standard, safe, adjustment protection). Stirrers have a speed display scale and optional capability to connect a PT1000 temperature sensor directly; when using this functionality control accuracy in the medium is  $\pm 0,5$  °C.



VMS-C7 Advanced



VMS-C4 Advanced



VMS-C10 Advanced

- Exact temperature setting via digital potentiometer
- Simultaneous digital display of target and actual temperatures via LCD display
- Display of actual temperature value in medium with 0,1 °C resolution when using PT1000 temperature sensor
- Integrated contact thermometer VT-5 (all VT-5 functions incorporated in hotplate stirrer)
- Stirrer can be controlled using two microcontrollers

IP protection class according to DIN EN 60529: IP 21

**Delivery information:** Supplied with PT1000 probe. A wide range of optional accessories are available.

Model	VMS-C4 Advanced	VMS-C7 Advanced	VMS-C10 Advanced
Max. stirring capacity H <sub>2</sub> O (l)	5	10	15
Speed range (min <sup>-1</sup> )		100 - 1500	
Temperature range (°C)		50...500	
Heat output (W)	250	1000	1500
Power input/output (W)		15/1,5	
Plate material		Glass-ceramic	
Plate dimensions (mm)	100×100	180×180	260×260
W×D×H (mm)	150×260×105	215×330×105	300×415×105
Weight (kg)	3	5	6

Description	Pk	Cat. No.
VMS-C4 Advanced magnetic hotplate stirrer, EU-plug	1	442-0661
VMS-C4 Advanced magnetic hotplate stirrer, UK-plug	1	442-0662
VMS-C4 Advanced magnetic hotplate stirrer, CH-plug	1	442-0663
VMS-C7 Advanced magnetic hotplate stirrer, EU-plug	1	442-0664
VMS-C7 Advanced magnetic hotplate stirrer, UK-plug	1	442-0665
VMS-C7 Advanced magnetic hotplate stirrer, CH-plug	1	442-0666
VMS-C10 Advanced magnetic hotplate stirrer, EU-plug	1	442-0667
VMS-C10 Advanced magnetic hotplate stirrer, UK-plug	1	442-0668
VMS-C10 Advanced magnetic hotplate stirrer, CH-plug	1	442-0669

Description	Pk	Cat. No.
<b>Accessories</b>		
Support rod, stainless steel, length 450 mm, Ø 10 mm, for all stirrers with M10 thread	1	442-2041
Bosshard clamp	1	442-2043
Extension cable, separates casing from the sensor, avoiding damage from vapours released by the medium	1	620-8104

## Magnetic hotplate stirrers, Advanced series



VWR Advanced magnetic hotplate stirrers deliver accurate and repeatable results. Units are microprocessor controlled and have an easy to read LED display for set point temperature. The control panel features easy to use controls which allow users to dial in adjustments for temperature, the stirrer-control dial has rpm adjustment markings. Rear housing features an integral support rod holder with locking knob to accept the optional support rod and clamp kit.

The low profile design takes up less space and fits into fume hoods. Spill-resistant housing channels fluids away from internal components. Safety features include a 'hot' symbol warning light which is illuminated when heat is turned on and remains on until top plate cools down. Stir protection if stirrer motor stops or fails, unit will automatically shut down the heater. Enhanced electronics regulate both heating and stirring and bring samples to temperature quickly and efficiently. Temperature measurement is controlled more accurately by using a resistance thermometer (RTD). Ramping feature slowly increases speed for improved safety and enhanced coupling, avoids splashing, improves spin bar control, and provides excellent low end speed control. Ceramic tops feature a chemically resistant, reflective white top plate surface that is easy to clean. Durable aluminium tops will not crack or chip, and provide a more even heating surface.



- Excellent temperature uniformity with consistent stirring at all speeds
- Microprocessor controlled with built-in memory allowing recall of last set temperature (even if unit has been turned off)
- Cool touch, chemically resistant housing
- LED display for temperature
- Choice of models with ceramic or aluminium top plates

**Delivery information:** Each unit is supplied complete with a PTFE coated magnetic stirring bar. Optional support rod kit is available which includes a 457 mm stainless steel support rod, thermometer/temperature probe extension clamp, three-prong medium swivel clamp, and hook connector.

Model	Aluminium top plate			Ceramic top plate		
Max. stirring capacity H <sub>2</sub> O (ml)	600	2500	6000	600	2500	6000
Speed range (min <sup>-1</sup> )	60 - 1600					
Speed stability (%)	±2					
Temperature range (°C)	Ambient +5...400			Ambient +5...500		
Temperature stability (%)	±2*			±3*		
Heat output (W)	400	1050	1600	400	1050	1600
Plate material	Aluminium			Ceramic		
Plate dimensions (mm)	100×100	180×180	250×250	100×100	180×180	250×250
W×D×H (mm)	167×274×108	250×375×108	330×455×108	167×274×108	250×375×108	330×455×108
Weight (kg)	2,0	4,2	6	2,0	4,2	6

Description	Pk	Cat. No.
<b>Models with aluminium top plates</b>		
Magnetic hotplate stirrer, aluminium plate, 100×100 mm, EU-plug	1	444-0596
Magnetic hotplate stirrer, aluminium plate, 100×100 mm, UK-plug	1	444-0597
Magnetic hotplate stirrer, aluminium plate, 100×100 mm, CH-plug	1	444-0598
Magnetic hotplate stirrer, aluminium plate, 180×180 mm, EU-plug	1	444-0602
Magnetic hotplate stirrer, aluminium plate, 180×180 mm, UK-plug	1	444-0603
Magnetic hotplate stirrer, aluminium plate, 180×180 mm, CH-plug	1	444-0604
Magnetic hotplate stirrer, aluminium plate, 250×250 mm, EU-plug	1	444-0608
Magnetic hotplate stirrer, aluminium plate, 250×250 mm, UK-plug	1	444-0609
Magnetic hotplate stirrer, aluminium plate, 250×250 mm, CH-plug	1	444-0610
<b>Models with ceramic top plates</b>		
Magnetic hotplate stirrer, ceramic plate, 100×100 mm, EU-plug	1	444-0593
Magnetic hotplate stirrer, ceramic plate, 100×100 mm, UK-plug	1	444-0594
Magnetic hotplate stirrer, ceramic plate, 100×100 mm, CH-plug	1	444-0595
Magnetic hotplate stirrer, ceramic plate, 180×180 mm, EU-plug	1	444-0599
Magnetic hotplate stirrer, ceramic plate, 180×180 mm, UK-plug	1	444-0600
Magnetic hotplate stirrer, ceramic plate, 180×180 mm, CH-plug	1	444-0601
Magnetic hotplate stirrer, ceramic plate, 250×250 mm, EU-plug	1	444-0605
Magnetic hotplate stirrer, ceramic plate, 250×250 mm, UK-plug	1	444-0606
Magnetic hotplate stirrer, ceramic plate, 250×250 mm, CH-plug	1	444-0607

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Stirrer support rod clamping kit (rod, 2 clamps and hook connector)	444-0566, 444-0567, 444-0568, 444-0569, 444-0570, 444-0571, 444-0572, 444-0573, 444-0574, 444-0575, 444-0576, 444-0577, 444-0578, 444-0579, 444-0580, 444-0581, 444-0582, 444-0583, 444-0584, 444-0585, 444-0586, 444-0587, 444-0588, 444-0589, 444-0590, 444-0591, 444-0592, 444-0593, 444-0594, 444-0595, 444-0596, 444-0597, 444-0598, 444-0599, 444-0600, 444-0601, 444-0602, 444-0603, 444-0604, 444-0605, 444-0606, 444-0607, 444-0608, 444-0609, 444-0610	1	444-2844
Support plate for 100 mm stirrers and hotplate stirrers	444-0566, 444-0567, 444-0568, 444-0575, 444-0576, 444-0577, 444-0578, 444-0579, 444-0580, 444-0584, 444-0593, 444-0594, 444-0595, 444-0596, 444-0597, 444-0598	1	444-2851

\* Below 100 °C ±2 °C environmental and sample conditions permitting.



## Magnetic hotplate stirrer, VMS-A

- Fixed safety circuit (400 °C)
- Soft-start stirring motor

IP protection class according to DIN EN 60529: IP 21

Model	VMS-A
Max. stirring capacity H <sub>2</sub> O (l)	10
Speed range (min <sup>-1</sup> )	100 - 2000
Temperature range (°C)	Ambient to 320
Heat output (W)	400
Power input/output (W)	15/2
Plate material	Stainless steel
Plate dimensions (mm)	Ø 125
WxDxH (mm)	168x220x105
Weight (kg)	2,4



Description	Pk	Cat. No.
VMS-A magnetic hotplate stirrer with stainless steel plate, EU-plug	1	442-0185
VMS-A magnetic hotplate stirrer with stainless steel plate, UK-plug	1	442-0186
VMS-A magnetic hotplate stirrer with stainless steel plate, CH-plug	1	442-0212



Monitoring temperature?  
The new VWR brochure for temperature measurement and recording.

Visit [vwr.com](http://vwr.com) for online download or flip catalogue.



## Magnetic hotplate stirrers, Professional series



VWR Professional hotplate stirrers are designed for applications that require exceptional accuracy, stability, and repeatability. Enhanced microprocessor control offers an external resistance thermometer (RTD) probe option that delivers superior temperature control of the sample. Stirring function, with continuous duty motor and powerful magnet, maintains set speed even under changing load or viscosity. Touch pad controls with easy to read, independent LED displays for temperature, speed, and time, allow operator to view all settings at once. Rear housing features a built-in support rod holder with locking knob that accepts the supplied probe kit. Low profile design takes up less space and fits into fume hoods. Spill resistant housing channels fluids away from internal components. A 'hot' symbol warning light is illuminated when heat is turned on and remains on until top plate cools down. Stir protection; if stirrer motor stops or fails, unit will automatically shut down heater.

Plate over-temperature limit ensures plate temperature will never exceed users programmed set temperature limit, allowing for control of sensitive flash points. An audible alarm will sound when time reaches zero or when unit reaches set point temperature in timed mode, and if the probe disengages from sample, unit will automatically shut off heater. Microprocessor control with enhanced electronics regulates both heating and stirring and brings samples to temperature quickly and efficiently. Ramping feature slowly increases speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control and provides excellent low end speed control. Ceramic tops feature a chemically resistant, reflective white top plate surface that is easy to clean. Durable aluminium tops will not crack or chip, and provide a more even heating surface.



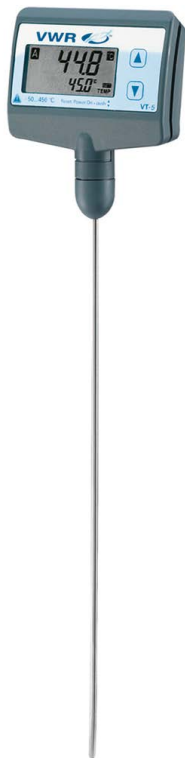
- Excellent temperature uniformity with consistent stirring at all speeds
- Separate digital displays for temperature, speed and time; show set and actual values. Display will show last used settings, even after power has been turned off
- Cool touch, chemically resistant housing
- Includes external RTD temperature probe kit
- Choice of models with ceramic or aluminium top plates

**Delivery information:** Each unit is supplied complete with a 203 mm stainless steel PT1000 temperature probe, a 457 mm stainless steel support rod, thermometer/temperature probe extension clamp, hook connector and a PTFE coated magnetic stirring bar.

Model	Aluminium top plate		Ceramic top plate	
	2500	6000	2500	6000
Max. stirring capacity H <sub>2</sub> O (ml)	2500	6000	2500	6000
Speed range (min <sup>-1</sup> )	60 - 1600			
Speed stability (%)	±2			
Temperature range (°C)	Ambient +5...400		Ambient +5...500	
Temperature stability (%)	±1*			
Heat output (W)	1050	1600	1050	1600
Plate material	Aluminium		Ceramic	
Plate dimensions (mm)	180×180	250×250	180×180	250×250
Heated area (mm)	180×180	250×250	180×180	250×250
WxDxH (mm)	250×375×108	330×455×108	250×375×108	330×455×108
Weight (kg)	4,2	6	4,2	6

Description	Pk	Cat. No.
<b>Models with aluminium top plates</b>		
Magnetic hotplate stirrer, aluminium plate, 180×180 mm, EU-plug	1	444-0632
Magnetic hotplate stirrer, aluminium plate, 180×180 mm, UK-plug	1	444-0633
Magnetic hotplate stirrer, aluminium plate, 180×180 mm, CH-plug	1	444-0634
Magnetic hotplate stirrer, aluminium plate, 250×250 mm, EU-plug	1	444-0638
Magnetic hotplate stirrer, aluminium plate, 250×250 mm, UK-plug	1	444-0639
Magnetic hotplate stirrer, aluminium plate, 250×250 mm, CH-plug	1	444-0640
<b>Models with ceramic top plates</b>		
Magnetic hotplate stirrer, ceramic plate, 180×180 mm, EU-plug	1	444-0629
Magnetic hotplate stirrer, ceramic plate, 180×180 mm, UK-plug	1	444-0630
Magnetic hotplate stirrer, ceramic plate, 180×180 mm, CH-plug	1	444-0631
Magnetic hotplate stirrer, ceramic plate, 250×250 mm, EU-plug	1	444-0635
Magnetic hotplate stirrer, ceramic plate, 250×250 mm, UK-plug	1	444-0636
Magnetic hotplate stirrer, ceramic plate, 250×250 mm, CH-plug	1	444-0637

\* Below 100 °C ±2 °C environmental and sample conditions permitting. Caution: If you are using a probe accessory with a Professional unit, make sure you don't exceed a sample temperature of 250 °C, otherwise the probe tip might become damaged.



## Electronic contact thermometer, VT-5



Ideal for accurate temperature control particularly with VWR hotplates and magnetic hotplate stirrers or other units with contact thermometer bushing according to DIN 12878, Class 2.

- Maintains the set temperature of the medium without overshooting
- Ensures precise temperature control even during unsupervised operation
- Clear, easy to read digital display shows actual temperature of the sample



IP protection class according to DIN EN 60529: IP 54

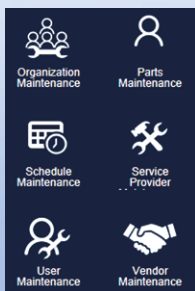
Control deviation (K)	±0,5
Measuring accuracy (K)	±0,2*
Measuring/control range (°C)	-50...+450
Resolution (K)	0,1
Sensor type	PT1000
Setting accuracy (K)	0,1
Weight (kg)	0,2
WxDxH (mm)	82x22x83 (without sensor)

Description	Pk	Cat. No.
VT-5 electronic contact thermometer with PT1000 probe	1	442-0573

\* plus sensor tolerance PT1000

## Equipment Management powered by VEM technology

**VWR CATALYST**  
We Enable Science Through Services



### Cloud-based services

VEM delivers to the desktop. It is built using the latest and most powerful Internet technologies to better support your requirements. VEM offers a modern widget-based user-interface that gives users access to all major functionality immediately.



### Centralised equipment repository

- Tracks all equipment service management needs
- Total cost of ownership
- Contract and warranty management
- Runs reports and creates key performance indicators
- Compares performance of manufacturers, service providers, vendors, etc

VEM combines your equipment portfolio, maintenance scheduling, inventory and work order management together for quick and easy administration, tracking and decision making.



For more information, visit our website [vwr.com/VEM](http://vwr.com/VEM) or send an email to [vwrcatalyst.eu@vwr.com](mailto:vwrcatalyst.eu@vwr.com)

## Water baths, VWB2 series



Unstirred water baths with double walled, stainless steel (inner) and coated steel sheet (outer) housing. All baths except the 2 litre models feature a drain tap for convenient emptying and are suitable for use with water or alternatively with heat transfer beads. Baths with a capacity of 5 litres or more have a heat transfer bead mode which is activated through the main menu. A drain stopper (plug) is supplied as an optional accessory to ensure heat transfer beads do not get stuck in the drain outlet. Note: Baths are classified Safety Class 1, allowing unattended operation when used with non flammable liquids.

- Fast heat up, accurate temperature control
- Digital temperature indicator with three temperature presets
- Temperature range ambient +5 to 99 °C
- Temperature stability  $\pm 0,2$  °C
- Adjustable over-temperature alarm protects samples from over heating
- Dry run protection turns the bath off if no water or low water level is detected
- Countdown timer and audible alarm: 1 to 999 minutes

**Delivery information:** Supplied with a hinged clear polycarbonate lid (the 2 litre models have an unhinged lid) and universal tray. A wide range of optional accessories are available.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath WxDxH (mm)	WxDxH (mm)	Weight (kg)	Pk	Cat. No.
VWB2 2	Ambient +5...99	$\pm 0,2$	0,25	2	117x131x125	186x200x305	2,5	1	462-0554
VWB2 2S (shallow)	Ambient +5...99	$\pm 0,2$	0,35	2	289x139x40	335x215x260	3	1	462-0555
VWB2 5	Ambient +5...99	$\pm 0,2$	0,35	5	281x131x125	335x215x335	3,9	1	462-0556
VWB2 12	Ambient +5...99	$\pm 0,2$	0,8	12	306x281x125	335x390x380	6,2	1	462-0557
VWB2 18	Ambient +5...99	$\pm 0,2$	1,05	18	281x485x125	335x590x420	9,2	1	462-0558
VWB2 26	Ambient +5...99	$\pm 0,2$	1,05	26	278x481x175	335x590x430	9,4	1	462-0559

Description	For	Pk	Cat. No.
<b>Anti-evaporation spheres for water baths</b>			
Anti-evaporation spheres		300	462-0584
<b>Accessories</b>			
Drain stoppers, to prevent heat transfer beads entering the drain opening	VWB2 5, VWB2 12, VWB2 18, VWB2 26	5	462-0585
<b>Stainless steel test tube racks</b>			
Stainless steel test tube rack	10 mm tubes	1	462-0560
Stainless steel test tube rack	13 mm tubes	1	462-0561
Stainless steel test tube rack	16 mm tubes	1	462-0562
Stainless steel test tube rack	19 mm tubes	1	462-0563
Stainless steel test tube rack	25 mm tubes	1	462-0564
Stainless steel test tube rack	30 mm tubes	1	462-0565
Stainless steel test tube rack	0,5 ml microtubes	1	462-0566
Stainless steel test tube rack	1,5 ml microtubes	1	462-0567
<b>Stainless steel raised shelves</b>			
Stainless steel raised shelf	VWB2 12	1	462-0568
Stainless steel raised shelf	VWB2 18	1	462-0569
Stainless steel raised shelf	VWB2 26	1	462-0570

Description	For	Pk	Cat. No.
<b>Stainless steel base trays</b>			
Stainless steel base tray	VWB2 2	1	462-0571
Stainless steel base tray	VWB2 2S, VWB2 5	1	462-0572
Stainless steel base tray	VWB2 12	1	462-0573
Stainless steel base tray	VWB2 26	1	462-0574
<b>Spare polycarbonate base trays</b>			
Polycarbonate base tray	VWB2 2	1	462-0575
Polycarbonate base tray	VWB2 2S, VWB2 5	1	462-0576
Polycarbonate base tray	VWB2 12	1	462-0577
Polycarbonate base tray	VWB2 26	1	462-0578
<b>Polycarbonate gabled lids</b>			
Polycarbonate gabled lid	VWRB2 2	1	462-0579
Polycarbonate gabled lid	VWRB2 2S	1	462-0580
Polycarbonate gabled lid	VWRB2 5	1	462-0581
Polycarbonate gabled lid	VWRB2 12	1	462-0582
Polycarbonate gabled lid	VWRB2 26	1	462-0583

## Shaking water baths, VLSB series



Linear shaking water baths with stainless steel tank and simple, intuitive user interface. It is quick and easy to fit alternative shaking trays. Heating element is positioned on the underside of the tank, no heating element in the bath means it is easier to clean and keep clean. Baths have an adjustable over-temperature alarm and advanced dry start/run dry protection. Available ready to use in two sizes to suit a variety of applications including sample preparation, mixing and thawing.

- Intuitive user interface enabling quick changes to temperature and shaking speed
- Discrete, under tray, magnetically coupled shaking mechanism is reliable and quiet in operation
- Excellent temperature stability  $\pm 0,1$  °C
- Temperature range: Ambient +5 to 99 °C
- Adjustable shaking speed range: 20 to 200 min<sup>-1</sup> (dependent on load)
- Display: Resolution 0,1 °C

**Delivery information:** Supplied with a universal shaking tray (features adjustable springs) and a clear gabled polycarbonate lid. A stainless steel gabled lid is available as an option and a wide choice of accessory trays and test tube racks are available; these must be ordered separately.



Model	VLSB12	VLSB18
Capacity (l)	12	18
Linear stroke length (mm)	20	
Shaker tray WxD (mm)	240x235	420x235
Shaking speed range (min <sup>-1</sup> )	20 - 200	
Stability	$\pm 0,1$ (at 70 °C)	
Temperature range (°C)	Ambient + 5...99	
Weight (kg)	9,2	11,2
Working Depth	Min. 60 mm	
WxDxH (mm)	360x380x275	335x565x275

Description	Pk	Cat. No.
Shaking water bath, VLSB12	1	462-0493
Shaking water bath, VLSB18	1	462-0494

Description	For	Pk	Cat. No.
<b>Trays for VLSB shaking baths</b>			
Test tube tray, (also used as plain tray) stainless steel for 3 test tube racks	VLSB12	1	462-0510
Test tube tray, (also used as plain tray) stainless steel for 5 test tube racks	VLSB18	1	462-0511
Replacement universal tray (flask capacity: 24x25, 18x50, 10x100, 6x250, 4x500 ml)	VLSB12	1	462-0512
Replacement universal tray (flask capacity: 44x25, 35x50, 18x100, 11x250, 5x500 ml)	VLSB18	1	462-0513
Stainless steel base tray (converts bath to unstirred bath)	VLSB12/VKB12	1	462-0500
Stainless steel base tray (converts bath to unstirred bath)	VLSB18/VKB18	1	462-0501
<b>Lids for VLSB shaking water baths</b>			
Gabled stainless steel lid	VLSB12/VKB 12	1	462-0371
Gabled stainless steel lid	VLSB18/VKB 18	1	462-0372
Replacement gabled, non drip, polycarbonate lid	VLSB12/VKB 12	1	462-0373
Replacement gabled, non drip, polycarbonate lid	VLSB18/VKB 18	1	462-0374
<b>Racks for VLSB shaking baths</b>			
Stainless steel test tube rack for 12 and 18L baths	48x10 mm Ø tubes	1	462-0502
Stainless steel test tube rack for 12 and 18L baths	44x13 mm Ø tubes	1	462-0503
Stainless steel test tube rack for 12 and 18L baths	24x16 mm Ø tubes	1	462-0504
Stainless steel test tube rack for 12 and 18L baths	21x19 mm Ø tubes	1	462-0505
Stainless steel test tube rack for 12 and 18L baths	12x25 mm Ø tubes	1	462-0506
Stainless steel test tube rack for 12 and 18L baths	10x30 mm Ø tubes	1	462-0507
Stainless steel test tube rack for 12 and 18L baths	119x 0,5 ml tubes	1	462-0509
Stainless steel test tube rack for 12 and 18L baths	48x1,5 ml tubes	1	462-0508

\* Note the tray racks must be used in conjunction with the appropriate stainless steel tray.

## Ultrasonic cleaning baths

Ultrasonic cleaning penetrates even microscopic openings to provide complete cleaning of the objects treated. This makes it one of the most effective, economical and powerful cleaning methods available. It has applications in laboratories, dental and medical technology, microelectronics, precision engineering, cosmetics, optics and the automotive industry.



Analogue models with timer

The baths have a heavy duty ultrasonic generator which ensures that the ultrasonic output remains constant, regardless of the bath temperature, fill level and cleaning material. This feature guarantees consistent and reproducible cleaning results. 'Frequency sweeping', a frequency modulation of the ultrasonic output generated, prevents 'standing waves' from being generated and ensures extremely homogeneous energy distribution in the cleaning bath.

All models have a timer. The analogue version is equipped with a mechanical timer up to maximum of 15 minutes. They also have an adjustable ultrasonic function from 10 to 100% of the effective output. In this way, the energy can be adjusted precisely to the objects to be cleaned.

- Housing and cleaning baths made from rust-proof stainless steel
- High performance PTZ ultrasonic converter with ceramic technology
- Baths with 9,2 litre capacity and upwards are fitted with a drain cock

All models are compliant with the European standards for EMC and electrical safety.

### Accessories

Baskets and beaker positioning lids: Stainless steel and rust-proof. Beakers and test tubes to be cleaned should never lie directly on the bottom of the tank as they will not benefit fully from the cleaning action. Immersion baskets position articles being cleaned correctly in the bath and prevent the bottom of the tank from becoming scratched. Beakers for cleaning smaller parts, or for working with aggressive solutions, can be fitted in positioning covers.



Model	USC100T	USC200T	USC100TH	USC200TH
Capacity (l)	0,8	1,8	0,8	1,8
Frequency (kHz)	45			
Max. output power (W)	60	120	60	120
Heating power (W)		-	45	90
WxDxH (mm)	205x100x155	175x165x270	205x100x155	175x165x225
Tank WxDxH (mm)	190x85x60	145x135x100	190x85x60	145x135x100

Description	Pk	Cat. No.
<b>USC "T" range: Analogue models with timer</b>		
USC100T	1	142-6044
USC200T	1	142-6046
<b>USC "TH" range: Analogue models with timer and integrated heater</b>		
USC100TH (heating at 65 °C, not adjustable)	1	142-6045
USC200TH	1	142-6047

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Set lid and mesh basket	USC100 models	1	142-6048
Set lid and mesh basket	USC200 models	1	142-6049
Set lid and mesh basket	USC300 models	1	142-6020
Set lid and mesh basket	USC500 models	1	142-6021
Set lid and mesh basket	USC600 models	1	142-6022
Set lid and mesh basket	USC900 models	1	142-6024
Set lid and mesh basket	USC1200 models	1	142-6023
Set lid and mesh basket	USC1700 models	1	142-6025
Set lid and mesh basket	USC2100 models	1	142-6026
Set lid and mesh basket	USC2600 models	1	142-6027
Positioning lid for 1 beaker 600 ml	USC200 models	1	142-1704
Positioning lid for 2 beakers 250 ml	USC200 models	1	142-1701
Positioning lid for 2 beakers 250 ml	USC300/USC500 models	1	142-6028
Positioning lid for 2 beakers 250 ml	USC600 models	1	142-1702

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Positioning lid for 2 beakers 250 ml	USC1200 models	1	142-6030
Positioning lid for 2 beakers 250 ml	USC1700 models	1	142-6032
Positioning lid for 2 beakers 600 ml	USC300/USC500 models	1	142-6035
Positioning lid for 4 beakers 250 ml	USC900 models	1	142-1703
Positioning lid for 4 beakers 600 ml	USC900 models	1	142-1705
Positioning lid for 8 beakers 250 ml	USC2100/USC2600 models	1	142-6033
Covering lid for 2 beakers 250 ml	USC100 models	1	142-6050
Covering lid for 2 beakers 600 ml	USC600 models	1	142-6037
Covering lid for 4 beakers 600 ml	USC1200 models	1	142-6038
Covering lid for 4 beakers 600 ml	USC1700 models	1	142-6039
Covering lid for 8 beakers 600 ml	USC2100/USC2600 models	1	142-6040
Glass beakers, 250 ml	all models	2	142-6042
Rubber bands for 250 ml beaker	all models	1	142-0111
Rubber bands for 650 ml beaker	all models	1	142-0112

## Ultrasound cleaning baths, USC

Cleaning via ultrasound has been one of the most effective methods of freeing parts with complex geometry, such as fins, undercuts, boreholes, pocket holes, etc from residues (contaminants).



The physical property of imploding vacuum bubbles causes tiny air bubbles to form in the cleaning fluid, which generate up to 1000 bar and 5000 °C when the forces implode and penetrate all small cavities. Combined with a cleaning agent geared to the type of contamination and the material to be cleaned, it is possible, through the cavitation forming on the part to be cleaned without any additional manual workload, to remove residues like oil carbon, incrustations, grease, oils, oxidation, paints, dust, rust, limescale, etc quickly in a way that protects the material and does not leave behind any residual matter.

- High performance PZT ultrasonic converter with ceramics technology
- Homogeneous distribution of ultrasound in the cleaning trough
- Lower noise development through higher frequency
- Robust heating with integrated run-dry protection
- Thermostat adjustable up to 80 °C
- Stainless steel tank material and cladding

### Ultrasonic bath USC T

This range has a digital timer 1 – 99 minutes in steps of 1 minute

### Ultrasonic bath USC TH

With a digital timer and a tank heater, infinitely variable up to 80 °C, to assist the cleaning effect. To monitor the heater, a yellow LED display illuminates, extinguishing when the set temperature is reached.

### Ultrasonic bath USC THD and THD/HF (high frequency)

This machine has a digital operating keypad to ensure convenient setting and operation. The special features of the D range are:

- Digital time setting of 1- 99 min or continuous
- Digital temperature display adjustable up to 80 °C
- The heater is equipped with dry run protection
- Ultrasound output adjustable over nine levels from 10 - 100%
- Stabilisation of the set output, independently of level and temperature
- Dual half-wave sound with sweep
- Degassing function to homogenise the tank fluid.



Model	Capacity (l)	Frequency (kHz)	Heating power (W)	WxDxH (mm)	Tank dimensions WxDxH (mm)	Weight (kg)
<b>USC T range</b>						
USC 300 T	2,8	45	200	265x160x235	240x135x100	4,1
USC 500 T	4,2			265x160x295	240x135x150	4,9
USC 600 T	5,4		400	325x175x295	300x150x150	5,4
USC 900 T	9,2		600	515x150x270	500x135x150	8,2
USC 1200 T	12,3		325x265x335	300x240x200	8,5	
USC 1700 T	16,8		350x325x335	325x300x200	9,7	
USC 2100 T	19,6		800	500x300x150	12,7	
USC 2600 T	26,1		1000	500x300x200	12,9	
<b>USC TH range</b>						
USC 300 TH	2,8	45	200	265x160x235	240x135x100	4,1
USC 500 TH	4,2			265x160x295	240x135x150	4,9
USC 600 TH	5,4		400	325x175x295	300x150x150	5,4
USC 900 TH	9,2		600	515x150x270	500x135x150	8,2
USC 1200 TH	12,3		325x265x335	300x240x200	8,5	
USC 1700 TH	16,8		350x325x335	325x300x200	9,7	
USC 2100 TH	19,6		800	500x300x150	12,7	
USC 2600 TH	26,1		1000	500x300x200	12,9	



Model	Capacity (l)	Frequency (kHz)	Heating power (W)	WxDxH (mm)	Tank dimensions WxDxH (mm)	Weight (kg)
<b>USC THD and THD/HF range</b>						
USC 300 THD & THD/HF	2,8	45/132	200	265x160x235	240x135x100	4,1
USC 500 THD	4,2	45		265x160x295	240x135x150	4,9
USC 600 THD & THD/HF	5,4	045/132	400	325x175x295	300x150x150	5,4
USC 900 THD	9,2	45		515x150x270	500x135x150	8,2
USC 1200 THD & THD/HF	12,3	45/132	600	350x325x335	325x300x200	8,5
				325x265x335	300x240x200	
USC 1700 THD	16,8	45	800	350x325x335	325x300x200	9,7
USC 2100 THD & THD/HF	19,6	45/132		530x325x365	500x300x150	12,7
USC 2600 THD	26,1	45	1000		500x300x200	12,9

Description	Pk	Cat. No.
<b>USC T range</b>		
Bench top cleaning unit with digital control, display and digital timer, USC 300 T	1	142-0083
Bench top cleaning unit with digital control, display and digital timer, USC 500 T	1	142-0087
Bench top cleaning unit with digital control, display and digital timer, USC 600 T	1	142-0090
Bench top cleaning unit with digital control, display and digital timer, USC 900 T	1	142-0098
Bench top cleaning unit with digital control, display and digital timer, USC 1200 T	1	142-0094
Bench top cleaning unit with digital control, display and digital timer, USC 1700 T	1	142-0101
Bench top cleaning unit with digital control, display and digital timer, USC 2100 T	1	142-0104
Bench top cleaning unit with digital control, display and digital timer, USC 2600 T	1	142-0108
<b>USC TH range</b>		
Bench top cleaning unit with digital control, display, digital timer and integrated heater, USC 300 TH	1	142-0084
Bench top cleaning unit with digital control, display, digital timer and integrated heater, USC 500 TH	1	142-0088
Bench top cleaning unit with digital control, display, digital timer and integrated heater, USC 600 TH	1	142-0091
Bench top cleaning unit with digital control, display, digital timer and integrated heater, USC 900 TH	1	142-0099
Bench top cleaning unit with digital control, display, digital timer and integrated heater, USC 1200 TH	1	142-0095
Bench top cleaning unit with digital control, display, digital timer and integrated heater, USC 1700 TH	1	142-0102
Bench top cleaning unit with digital control, display, digital timer and integrated heater, USC 2100 TH	1	142-0105
Bench top cleaning unit with digital control, display, digital timer and integrated heater, USC 2600 TH	1	142-0109
<b>USC THD and THD/HF range</b>		
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 300 THD (45 Hz)	1	142-0085
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 300 THD/HF (132 Hz)	1	142-0086
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 500 THD (45 Hz)	1	142-0089
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 600 THD (45 Hz)	1	142-0092
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 600 THD/HF (132 Hz)	1	142-0093
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 900 THD	1	142-0100
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 1200 THD (45 Hz)	1	142-0096
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 1200 THD/HF (132 Hz)	1	142-0097
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 1700 THD (45 Hz)	1	142-0103
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 2100 THD (45 Hz)	1	142-0106
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 2100 THD/HF (132 Hz)	1	142-0107
Bench top cleaning unit with digital control, display, digital timer, integrated heater and degas-function, USC 2600 THD (45 Hz)	1	142-0110

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Set lid and mesh basket	USC100 models	1	142-6048
Set lid and mesh basket	USC200 models	1	142-6049
Set lid and mesh basket	USC300 models	1	142-6020
Set lid and mesh basket	USC500 models	1	142-6021
Set lid and mesh basket	USC600 models	1	142-6022
Set lid and mesh basket	USC900 models	1	142-6024
Set lid and mesh basket	USC1200 models	1	142-6023
Set lid and mesh basket	USC1700 models	1	142-6025
Set lid and mesh basket	USC2100 models	1	142-6026
Set lid and mesh basket	USC2600 models	1	142-6027
Positioning lid for 1 beaker 600 ml	USC200 models	1	142-1704
Positioning lid for 2 beakers 250 ml	USC200 models	1	142-1701
Positioning lid for 2 beakers 250 ml	USC300/USC500 models	1	142-6028
Positioning lid for 2 beakers 250 ml	USC600 models	1	142-1702
Positioning lid for 2 beakers 250 ml	USC1200 models	1	142-6030
Positioning lid for 2 beakers 250 ml	USC1700 models	1	142-6032
Positioning lid for 2 beakers 600 ml	USC300/USC500 models	1	142-6035
Positioning lid for 4 beakers 250 ml	USC900 models	1	142-1703
Positioning lid for 4 beakers 600 ml	USC900 models	1	142-1705
Positioning lid for 8 beakers 250 ml	USC2100/USC2600 models	1	142-6033
Covering lid for 2 beakers 250 ml	USC100 models	1	142-6050
Covering lid for 2 beakers 600 ml	USC600 models	1	142-6037
Covering lid for 4 beakers 600 ml	USC1200 models	1	142-6038
Covering lid for 4 beakers 600 ml	USC1700 models	1	142-6039
Covering lid for 8 beakers 600 ml	USC2100/USC2600 models	1	142-6040
Glass beakers, 250 ml	all models	2	142-6042
Rubber bands for 250 ml beaker	all models	1	142-0111
Rubber bands for 650 ml beaker	all models	1	142-0112

# TEMPERATURE MONITORING APPLICATION GUIDE - GET THE RIGHT TOOL FOR THE JOB

Application	Refrigerated circulators	Recirculating chillers	Heated circulators	MX immersion circulators	Calibration baths	Bench top chillers (LS/LM/MM)	Coliform baths	Cryoprecipitate bath	General purpose water baths	Immersion probes and flow through coolers	Role of temperature controlled equipment
Acid cooling		x									Removes the heat from reaction ensuring process equipment is protected.
Anodising	x	x				x					Keeps acid bath at the correct temperature.
Asphalt sample tempering	x					x					Asphalt ductility testing typically requires temperature control to be better than 1 °C.
Atomic Absorption Spectroscopy (AAS)		x									Tube heating must be closely controlled but the clamps need to be precisely cooled to prevent damage to the clamps and distortion of results.
Bacterial incubation											See 'Incubation'
Bakeries		x									Chillers maintain temperature during the mixing process of some baking processes.
Bioreactor		x									Changes in temperature effects growth inside the bioreactor; temperature can be controlled or ramped from one to another.
Blood banks - blood thawing	x							x			When Fresh Frozen Plasma (FFP) is thawed at the proper temperature and rate, a precipitate forms that is rich in fibrogen, factor VIII, von Willebrand factor, factor XIII and fibronectin.
Blow moulding		x									Heat removal is critical in ensuring the moulding machine performs at optimal levels, e.g. plastic bottle production.
Calibration	x	x	x	x	x						Many circulating baths and chillers can be used in calibration, depending on the application, the thermal load is usually very small, so choose a product based on temperature stability, good circulation and uniformity. Other features such as programmability and data logging may also be helpful.
CCD camera cooling	x	x				x					See 'Peltier devices'
Cell culture	x		x								Changes in temperature will effect cell growth, use equipment to maintain one temperature or to ramp from temperature to temperature.
Cell freezing	x										Refrigerated circulators for a sub ambient environment and quick freeze.
Chemical processing		x									Cooling is needed to ensure that the process and follow-up testing are done accurately.
Chromatography column	x		x								Control and maintenance of column temperature are important for retention time reproducibility.
Cloud point testing	x										The sample is periodically examined while it is being cooled in the cloud and pour point apparatus. A refrigerated circulator is necessary to maintain the sample at -1, -18 and -35 °C for test measurement according to ASTM requirements. Temperatures depend on the sample 100 to -50 °C.
Computed Tomography (CT) scanning		x									CT scan equipment adds a large heat load at medical sites; adequate cooling is needed to prevent the equipment from overheating and malfunctioning.
Concentrator/extractor		x									Cooling/condensing of solvent for recycling or disposal.
Condenser cooling	x	x				x				x	A device that transfers heat out of a refrigeration system to a medium (either air, water, or a combination of air and water), that absorbs heat and transfers it to a disposal point.
Culture media warming	x		x	x							A heating circulator is extremely convenient for dissolving culture media and warming.
Defined substrate technology testing							x				See 'E. coli determination'
Densitometers	x	x				x					Maintains optimised readout temperature between 18 and 27 °C, and protects from electronics that heat the unit up significantly. Where an instrument is placed within a bath to determine readings, good circulation and uniformity of the bath are critical.
Diffusion pumps		x									Chilled water circulates through coils on the outside of the chamber to cool the chamber, thereby preventing thermal runaway and permitting operation over long periods of time.
Distillation apparatus	x										Use to condense fractions as they are distilled off according to boiling point.

Application	Refrigerated circulators	Recirculating chillers	Heated circulators	MX immersion circulators	Calibration baths	Bench top chillers (LS/LM/MM)	Coliform baths	Cryoprecipitate bath	General purpose water baths	Immersion probes and flow through coolers	Role of temperature controlled equipment
DNA melting curves	x		x								DNA melting curve analysis can identify single copy gene fragments amplified from genomic DNA.
Dry ice replacement		x								x	A cooler/chiller can be an advantage over having to keep dry ice on hand, and is more economical than continually purchasing dry ice.
<i>E. coli</i> determination							x				Testing drinking water for the presence/absence of coliforms and <i>E. coli</i> in compliance with Safe Drinking Water Regulations.
Electrical Discharge Machining (EDM)		x									The electrolyte fluid needs cooling as sparks produced while machining generate heat. Power levels are probably around 1 kW.
Electron microscopes											An electron microscope is a large microscope that is capable of looking at the electron level of elements. A laser is used to control the temperature of the exciter lamp. See 'Lasers'
Electrophoresis and isoelectric focusing	x										Good temperature control of plate or tank reduce variation in results and ensures gel remains undamaged by heat energy from electric current.
Enzyme assays	x		x	x							A circulator is used to maintain the optimum temperature of a given enzyme sample.
Exothermic reaction cooling	x	x				x				x	Exothermic processes that release heat energy. Refrigerated systems assist in controlling the requisite temperature.
Faecal coliform testing							x				Testing can be done specifically for faecal coliform or for total coliform bacteria, which includes all coliform strains and may indicate faecal contamination.
Fermentation - e.g. beer or wine		x									Controlling the temperature during fermentation processes is critical to get the right taste and composition.
Food processing		x									The method of transforming raw ingredients into consumable food relies heavily on temperature control technology. Specific temperatures are critical for handling food.
Fourier Transform Infrared Spectroscopy (FTIR)	x		x								FTIR is capable of capturing roughly 60 compounds within the IR scale. A heated circulator is required to maintain the vapourised compound sample in its normal state (185 °C) and prevent it returning to liquid.
Freeze point determination	x										A refrigerated circulator is used to reduce the temperature of the heated solution while the solution is observed for initial crystalline formation and subsequent freezing. These systems require good temperature control with temperature traceability and low heat loads.
Gas Chromatography Mass Spectrometry (GC-MS)		x									Smaller, tabletop units do not require sub ambient cooling; however, larger, more expensive units that use turbo molecular pumps or diffusion pumps can require sub ambient cooling.
General lab cooling	x	x				x					Normally a refrigerated circulator will provide the necessary temperature level required to cool a sample.
Hydraulics cooling		x									Heating of the hydraulic fluid in operation is caused by inefficiencies. Inefficiencies result in loss of input power, which is converted to heat. It is important to not allow the fluid temperature to exceed the point at which viscosity falls below the optimum level for the system's components.
Hydrocooling		x									Process of chilling food, such as fruits and vegetables, in order to stop the process of ripening without freezing, which destroys its composition.
Impact testing	x										Pieces are tested at various temperatures to replicate seasonal or ambient changes. For example, freezing/thawing changes or operation of a specific piece in a cold vs. warm environment. Temperature can usually be controlled by the use of a refrigerated circulator.
Incubation	x	x	x			x					For most cell cultures, 37 °C is optimal temperature and a heating recirculator or circulating bath will provide this. Incubation can be done at lower temperatures where refrigeration may be helpful. Accurate temperature control and temperature traceability may also be required
Incubation water jacket	x	x									The inner wall of the jacket conducts the fluid temperature to allow air temperature control inside the incubator without affecting the humidity.
Inductively Coupled Plasma (ICP)		x									Cooling is needed to keep components from overheating. Precise temperature control is not important.

# TEMPERATURE MONITORING APPLICATION GUIDE - GET THE RIGHT TOOL FOR THE JOB

Application	Refrigerated circulators	Recirculating chillers	Heated circulators	MX immersion circulators	Calibration baths	Bench top chillers (LS/LM/MM)	Coliform baths	Cryoprecipitate bath	General purpose water baths	Immersion probes and flow through coolers	Role of temperature controlled equipment
Injection moulding		x**									A chiller is used to cool the moulds in order to have the plastic release. Rapidly cooling the mould solidifies melted plastic allowing it to be released.
Kinetic research	x		x	x							Kinetic energy is the energy of motion. This motion changes based on the temperature of the atom or substance being measured.
Laminating		x				x					Generally, setting time would be dependent on these three items, but by efficiently applying cooling, we can reduce downtime and speed up the lamination process.
Lasers/laser cooling		x				x					Failure to remove heat from the laser can lead to the laser not meeting performance standards, or even worse, premature failure. Gas lasers are large power consumers. Precise temperature is not important. Temperature for cooling an argon laser is 20 °C or so. Carbon dioxide lasers work better at low temperatures below 0 °C. Good flow is important. Loss of coolant will result in immediate shut down due to the result of overheating and damage to equipment. Diode lasers have similar requirements, but have smaller heat loads, a hundred to a kW for lab systems.
Liquid nitrogen replacement		x								x	The convenience of a cooler/chiller can be an advantage over having LN2 on hand.
Lithographic equipment		x									These are typically small laser systems that require about 100 W of heat removal and good pumping (6306T or 6106T).
Lypholisation										x	See 'Dry ice replacement'
Machine tool		x									Always use a liquid-to-liquid heat exchanger with one path for the cutting oil and the other for the chiller.
Magnetic Resonance Imaging (MRI)		x									The electrical current through the coils generates heat that must be removed. Precise temperature control is not important.
Medical diagnostic equipment		x									See 'CT', 'MRI' and 'PET scanners'. These are examples of medical diagnostic equipment that need temperature control.
Milling machines		x									See 'Machine tool'
Nuclear Magnetic Resonance (NMR)		x				x					NMRs using electromagnetic field generation have coils that consume tens of kW and must be kept at constant reproducible temperature. High flows and precise temperature control are very important.
Peltier devices	x	x				x					Chiller removes the heat from the heat sink that is that is collected from the cooling side of the Peltier device.
PET scanners		x*									Chillers cool the high powered electronics inside the machines that are the latest in medical diagnostic tools.
Petroleum testing			x								See 'Viscosity measurement'
Photographic solution tempering	x		x								Photographic solutions require precise temperature control in order to produce consistent and repeatable results.
Pilot plants		x									A variety of temperature control devices may be needed depending on the specific processes being tested.
Plasma etching		x									See 'Plasma torch cutting'
Plasma thawing								x			When FFP is thawed in the cold, a cryoprecipitate forms, which is rich in fibrinogen, factor VIII, von Willebrand factor, factor XIII and fibronectin.
Plasma torch cutting		x									The plasma is hot enough to melt or cut the metal. Cooling is needed to maintain tolerances.
Plastic injection moulding		x**									See 'Injection moulding'
Polarimeter	x										After sample preparation, many samples require cooling.
Polymer studies	x		x								This can involve the study of thermal annealing - determination of a plastic's properties at different temperatures.
Pour point testing	x										See 'Cloud point testing'
Printing		x									See 'Lithographic equipment' and 'Hydraulics cooling'
Quick cooling	x	x				x				x	Low temperatures and good flow rate are important. Temperatures well below 0 °C; the lower the better.
Reaction vessel	x	x				x					A chiller is used to control the vessel temperature by circulation throughout the vessel's jacketed surface.

\*Turbine pump configurations are recommended

\*\*High flow pumps are typically required

Application	Refrigerated circulators	Recirculating chillers	Heated circulators	MX immersion circulators	Calibration baths	Bench top chillers (LS/LM/MM)	Coliform baths	Cryoprecipitate bath	General purpose water baths	Immersion probes and flow through coolers	Role of temperature controlled equipment
Refractometers	x	x	x			x					Substances with a known refractive index at a specific temperature are more readily identified by maintaining the sample at the correct temperature with a circulator or chiller.
Rotary evaporators	x	x				x				x	A chiller or refrigerated circulating bath will help cool the vapour in a condenser, allowing faster collection of the components for further analysis or disposal.
Sample testing	x		x	x							Samples can be cooled, heated, or ramped between cold and heat to learn what properties of the sample will be changed at what point. Viscosity testing is an example of sample testing.
Scanning electron microscopes		x									A chiller is required for sufficient heat removal.
Solvent trapping										x	Designed to capture solvent vapours from extractions, often to comply with the safety requirements.
Spectrophotometers	x										Circulators used to maintain specific temperatures.
Sputtering systems		x									Vacuum disposition system for successful coating of film used in semiconductor applications. System promotes adhesion, densifies coating and creates residual compressive stress in the film.
Temperature gradients	x		x	x	x				x		The temperature gradient is defined only at those spatial scales at which temperature (more generally, fluid thermodynamics) itself is defined.
Thawing frozen samples	x		x	x					x		Many frozen products can be steeped in a warm heated circulator for rapid thaw, while other, more fragile products need to be brought to temperature slowly at temperatures at or below ambient.
Turbo molecular pump						x				x	Turbo molecular pumps are used in semiconductor processing. There are two separate areas to look at. The first is cooling of the pump. Heat loads are typically small, a few hundred watts. Precise temperature is not important. The second area is cooling the trap that connects to the vacuum. Liquid nitrogen is often used for this, but an Immersion probe cooler is an excellent alternative.
Vacuum forming or vacuforming		x									Cooling keeps the mould at a consistent temperature to maintain tolerances in production; without cooling, the mould would expand with each application of heated plastic.
Vacuum systems/vacuum traps	x	x								x	For low temperature operation, the cold trap is immersed in a Dewar flask. These traps effectively remove solvent and reactant vapours.
Viscosity measurement	x		x								Precise temperature control is paramount as is traceability to temperature standard. The viscometer is placed directly into the bath. Good circulation and uniformity of the bath are critical.
Warming culture media	x		x	x					x		Culture media should be brought to the optimal required growth temperature prior to inoculation (usually 37 °C). This warming process can be accomplished with the use of a heating circulator or general purpose water bath.
Water jet cutting		x									Preferred method when the materials being cut are sensitive to high temperatures generated by other methods.
Welders/welding		x									For some pieces of welding equipment, heat needs to be removed from the welding head to preserve the integrity of parts of the head. Small TIG or MIG welders consume 2 - 3 kW. x
X-Ray diffraction		x									The X-Ray tube must be cooled. Precise temperature control is not important but loss of cooling will trip shut down power supply.



## Immersion thermostat, MX



The MX immersion thermostat is user friendly with three control buttons and on-screen prompts. The convenient slide control enables the flow rate to be easily adjusted, and it can clamp securely to straight or curved tank walls.

- Large EasyView™ LCD display with alarm or fault icons and English prompts and menus
- User-adjustable high and low temperature limits and low liquid level alarms
- Single speed pressure pump
- Integral pump and heater coil protection
- Single point calibration

Complies with DIN 12876-1, Safety Class I

Maximum pump capacities:  
11,9 l/min, 120 mbar

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	WxDxH (mm)	Weight (kg)	Pk	Cat. No.
MX	RT*+10...135	±0,07	1,1	109x97x358	4,5	1	462-0205

\* RT = Ambient

## Baths, polycarbonate with MX temperature controller



Transparent polycarbonate baths keep samples visible, units feature user friendly MX temperature controller with three control buttons and on-screen prompts. The convenient slide control enables the flow rate to be easily adjusted, the elevated tank bottom gives secure handholds when lifting or positioning the bath and is stable on uneven surfaces. Controller bridge made from heat and chemical resistant DuraTop™ is easily removed to clean the tank. The 17 and 28 litre models have a drain and opening with lid for optional cooling coil which is ideal for set points near ambient temperature.

- Large EasyView™ LCD display with alarm or fault icons and English prompts and menus
- User-adjustable high and low temperature limits and low liquid level alarms
- Single speed pressure pump
- Integral pump and heater coil protection
- Single point calibration

Complies with DIN 12876-1 Class I safety requirements for use with non flammable liquids

Maximum pump capacities:  
11,9 l/min, 120 mbar

**Delivery information:** Supplied with a lid.



Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath WxDxH (mm)	WxDxH (mm)	Pk	Cat. No.
MX11P100	RT* +10...85	±0,07	1,1	11	156x210x203	208x532x441	1	462-0206
MX17P100	RT* +10...85	±0,07	1,1	17	305x105x203	345x457x441	1	462-0207
MX28P100	RT* +10...85	±0,07	1,1	28	300x315x203	345x562x441	1	462-0208

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Cooling coil	Use with VWR baths, 462-0207, 462-0208, 462-0212, 462-0213 and 462-0214	1	462-0279
<b>Lids for polycarbonate baths</b>			
Replacement lid for VWR open bath systems	Polycarbonate baths with 11 litre capacity (462-0206)	1	462-0281
Replacement lid for VWR open bath systems	Polycarbonate baths with 17 litre capacity (462-0207)	1	462-0283
Replacement lid for VWR open bath systems	Polycarbonate baths with 28 litre capacity (462-0208)	1	462-0285

\* RT = Ambient

## Baths for thermostats

Made from stainless steel or polycarbonate. Ideal for use with VWR immersion thermostats. To be used where the durability of stainless steel or the transparency of polycarbonate are advantageous.

- Open baths, ideal for use with immersion thermostats from VWR or other manufacturers
- Available in stainless steel or polycarbonate
- Robust and durable
- Easy to clean

**Note:** The temperature ranges listed below apply only when the vessels are used with immersion thermostats; an immersion thermostat is required but not supplied with the bath.

Temp. range (°C)	Capacity (l)	Bath WxDxH (mm)	WxDxH (mm)	Pk	Cat. No.
<b>Polycarbonate</b>					
<85	8	284×156×203	302×174×232	1	462-0265
<85	11	389×156×203	406×174×232	1	462-0266
<85	14	493×156×203	513×174×232	1	462-0267
<85	17	312×305×203	351×324×232	1	462-0268
<85	23	417×305×203	455×324×232	1	462-0269
<85	28	523×305×203	561×324×232	1	462-0270
<b>Stainless steel</b>					
<150	13	229×165×203	321×289×244	1	462-0263
<150	28	419×216×203	530×327×244	1	462-0264



## Baths and lids, stainless steel, with MX temperature controller



Stainless steel baths with user friendly MX temperature controller with three control buttons and on-screen prompts. The convenient slide control enables the flow rate to be easily adjusted. Baths can be used for external circulation, the controller bridge, made from chemically resistant DuraTop™, is easily removed to clean the tank. The 10 and 20 litre models have an opening with lid for optional cooling coil which is ideal for set points near ambient temperature.

- Large EasyView™ LCD display with alarm or fault icons and English prompts and menus
- User-adjustable high and low temperature limits and low liquid level alarms
- Single speed pressure pump
- Integral pump and heater coil protection
- Single point calibration

Complies with DIN 12876-1, Safety Class I

Maximum pump capacities:

11,9 l/min, 120 mbar

**Delivery information:** Supplied with a bath cover.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath WxDxH (mm)	WxDxH (mm)	Pk	Cat. No.
MX06S135	RT* +10...135	±0,07	1,1	6	110×100×152	206×340×406	1	462-0211
MX10S135	RT* +10...135	±0,07	1,1	10	255×99×152	342×353×406	1	462-0212
MX20S135	RT* +10...135	±0,07	1,1	20	214×257×203	342×531×457	1	462-0213

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Cooling coil	Use with VWR baths, 462-0207, 462-0208, 462-0212, 462-0213 and 462-0214	1	462-0279
<b>Lids for stainless steel baths</b>			
Replacement lid for VWR open bath systems	Stainless steel baths with 6 litre capacity (462-0211)	1	462-0286
Replacement lid for VWR open bath systems	Stainless steel baths with 10 litre capacity (462-0212)	1	462-0287
Replacement lid for VWR open bath systems	Stainless steel baths with 20 litre capacity (462-0213)	1	462-0288

\* RT = Ambient

## Heated circulating baths

Description	Controller type	Temp. range	Temp. stability	Display resolution		Heater	Pump speed	Max. pressure flow rate	Max. pressure		Max. suction flow rate	Cat. No.
		(°C)	(°C)	Set	Read	W		(l/min)	psi	bar	(l/min)	
Immersion circulator	MX immersion	Ambient +10...+135	±0,07	0,1	0,1	1100	One	11,9	1,8	0,12	-	462-0205
7 l Circulator	Advanced Digital	Ambient +10...+200	±0,01	0,01	0,01	2200	Variable	16,7	3,6	0,25	12,2	462-0215
7 l Circulator	Advanced Programmable	Ambient +10...+200	±0,01	0,01	0,001	2200	Variable	16,7	3,6	0,25	12,2	462-0216
15 l Circulator	Advanced Digital	Ambient +10...+200	±0,01	0,01	0,01	2200	Variable	16,7	3,6	0,25	12,2	462-0217
15 l Circulator	Advanced Programmable	Ambient +10...+200	±0,01	0,01	0,001	2200	Variable	16,7	3,6	0,25	12,2	462-0218
20 l Circulator	Advanced Digital	Ambient +10...+200	±0,01	0,01	0,01	2200	Variable	16,7	3,6	0,25	12,2	462-0219
20 l Circulator	Advanced Programmable	Ambient +10...+200	±0,01	0,01	0,001	2200	Variable	16,7	3,6	0,25	12,2	462-0220
28 l Circulator	Advanced Digital	Ambient +10...+200	±0,01	0,01	0,01	2200	Variable	16,7	3,6	0,25	12,2	462-0221
28 l Circulator	Advanced Programmable	Ambient +10...+200	±0,01	0,01	0,001	2200	Variable	16,7	3,6	0,25	12,2	462-0222
Open bath systems												
11 l Open bath system	MX	Ambient +10...+85	±0,07	0,1	0,1	1100	One	11,9	1,8	0,12	-	462-0206
17 l Open bath system	MX	Ambient +10...+85	±0,07	0,1	0,1	1100	One	11,9	1,8	0,12	-	462-0207
28 l Open bath system	MX	Ambient +10...+85	±0,07	0,1	0,1	1100	One	11,9	1,8	0,12	-	462-0208
6 l Open bath system	MX	Ambient +10...+135	±0,07	0,1	0,1	1100	One	11,9	1,8	0,12	-	462-0211
10 l Open bath system	MX	Ambient +10...+135	±0,07	0,1	0,1	1100	One	11,9	1,8	0,12	-	462-0212
20 l Open bath system	MX	Ambient +10...+135	±0,07	0,1	0,1	1100	One	11,9	1,8	0,12	-	462-0213

## Specialty baths

Description	Controller type	Temp. range	Temp. stability	Display resolution		Reservoir capacity	Tank material	Heater	Display/interface	Pump type	Pump speed	Cat. No.
		°C	°C	Set	Read	l		W				
Viscosity bath, 29 l, 5 round	Standard Digital	Ambient +10...+85	±0,04	0,01	0,01	29	Polycarbonate	2200	3,75" touch pad LCD	Pressure	Two	462-0209
Viscosity bath, 29 l, 3 square	Standard Digital	Ambient +10...+85	±0,04	0,01	0,01	29	Polycarbonate	2200	3,75" touch pad LCD	Pressure	Two	462-0210
Coliform bath, 28 l	MX	Ambient +10...+135	±0,07	0,1	0,1	28	Stainless steel	1100	3,25" LCD	Pressure	One	462-0214

## Refrigerated circulator baths

Description	Controller type	Temp. range	Temp. stability	Display resolution		Cooling capacity (W)				Heater	Pump type	Pump speeds	Max. pressure flow rate	Cat. No.
		°C	°C	Set	Read	100 °C	20 °C	0 °C	-20 °C	W			l/min	
-20, 7 l Circulator, low profile	Advanced Digital	-20...+200	±0,01	0,01	0,01	200	200	120	30	2200	Pressure/suction	Variable	16,7	462-0224
-20, 7 l Circulator, low profile	MX	-20...+135	±0,07	0,1	0,1	200	200	120	30	1100	Pressure	One	10,6	462-0223
-20, 7 l Circulator	Advanced Digital	-20...+200	±0,01	0,01	0,01	200	200	120	30	2200	Pressure/suction	Variable	16,7	462-0226
-20, 7 l Circulator	MX	-20...+135	±0,07	0,1	0,1	200	200	120	30	1100	Pressure	One	10,6	462-0225
-20, 7 l Circulator	Advanced Programmable	-20...+200	±0,01	0,01	0,001	200	200	120	30	2200	Pressure/suction	Variable	16,7	462-0227
-40, 7 l Circulator	Advanced Digital	-40...+200	±0,01	0,01	0,01	505	505	375	130	2200	Pressure/suction	Variable	16,7	462-0228
-40, 7 l Circulator	Advanced Programmable	-40...+200	±0,01	0,01	0,001	505	505	375	130	2200	Pressure/suction	Variable	16,7	462-0229
-30, 15 l Circulator	Advanced Digital	-30...+200	±0,01	0,01	0,01	915	915	505	165	2200	Pressure/suction	Variable	16,7	462-0230
-30, 15 l Circulator	Advanced Programmable	-30...+200	±0,01	0,01	0,001	915	915	505	165	2200	Pressure/suction	Variable	16,7	462-0231
-40, 15 l Circulator	Advanced Digital	-40...+200	±0,01	0,01	0,01	1000	1000	650	265	2200	Pressure/suction	Variable	16,7	462-0232
-40, 15 l Circulator	Advanced Programmable	-40...+200	±0,01	0,01	0,001	1000	1000	650	265	2200	Pressure/suction	Variable	16,7	462-0233
-30, 20 l Circulator	Advanced Digital	-30...+200	±0,01	0,01	0,01	915	915	505	165	2200	Pressure/suction	Variable	16,7	462-0234
-30, 20 l Circulator	Advanced Programmable	-30...+200	±0,01	0,01	0,001	915	915	505	165	2200	Pressure/suction	Variable	16,7	462-0235
-30, 28 l Circulator	Advanced Digital	-30...+200	±0,01	0,01	0,01	915	915	505	165	2200	Pressure/suction	Variable	16,7	462-0236
-30, 28 l Circulator	Advanced Programmable	-30...+200	±0,01	0,01	0,001	915	915	505	165	2200	Pressure/suction	Variable	16,7	462-0237
-25, 45 l Circulator	Advanced Digital	-25...+135	±0,01	0,01	0,01	1400	1400	800	250	2200	Pressure/suction	Variable	16,7	462-0238
-25, 45 l Circulator	Advanced Programmable	-25...+135	±0,01	0,01	0,001	1400	1400	800	250	2200	Pressure/suction	Variable	16,7	462-0239

Pump connection	Working access	Overall dimensions	Flammability class	Over-temp.protection/failsafe heater control	Low level protection	Reservoir drain	Cooling coil	Shipping weight	Cat. No.
	LxWxD (cm)	LxWxD (cm)	DIN 12876-1					kg	
-	-	10,9x9,7x35,8	I (NFL)	•	•			4,53	462-0205
M16x1	15,7x14,2x12,7	49,9x22,1x40,9	III (FL)	•	•	•	•	19,026	462-0215
M16x1	15,7x14,2x12,7	49,9x22,1x40,9	III (FL)	•	•	•	•	19,026	462-0216
M16x1	21,2x27,6x14	56,9x36,8x42,2	III (FL)	•	•	•	•	28,086	462-0217
M16x1	21,2x27,6x14	56,9x36,8x42,2	III (FL)	•	•	•	•	28,086	462-0218
M16x1	25x31,6x14	61x41,9x42,2	III (FL)	•	•	•	•	31,71	462-0219
M16x1	25x31,6x14	61x41,9x42,2	III (FL)	•	•	•	•	31,71	462-0220
M16x1	31,4x35,9x14	67,2x45,7x42,2	III (FL)	•	•	•	•	37,146	462-0221
M16x1	31,4x35,9x14	67,2x45,7x42,2	III (FL)	•	•	•	•	37,146	462-0222
½" O.D. barbed tubes	21x15,6x20,3	42,7x20,8x44,1	I (NFL)	•	•			9,5	462-0206
½" O.D. barbed tubes	10,5x30,5x20,3	35,3x34,5x44,1	I (NFL)	•	•	•	Acc	14,496	462-0207
½" O.D. barbed tubes	31,5x30,5x20,3	56,2x34,5x44,1	I (NFL)	•	•	•	Acc	25,368	462-0208
½" O.D. barbed tubes	10x11x15,2	34x20,6x40,6	I (NFL)	•	•			9,06	462-0211
½" O.D. barbed tubes	9,9x25,5x15,2	35,3x34,2x40,6	I (NFL)	•	•		Acc	17,667	462-0212
½" O.D. barbed tubes	26,4x22,8x15,2	53,1x34,2x40,6	I (NFL)	•	•		Acc	24,462	462-0213

Max. pressure	Flow rate	Max. pressure	Pump connection	Working access	Overall dimensions	Flammability class	Over-temp. protection/failsafe heater control	Low level protection	Reservoir drain	Cooling coil port	Max. ambient temp.	Shipping weight	Cat. No.
gpm	l/min	psi	bar		LxWxD (cm)	LxWxH (cm)	DIN 12876-1				°C	kg	
2,7	10,2	2,9	0,2	M16x1	(5)x5,1 Øx28,6	54,4x 22,9x52,6	I (NFL)	•	•	•	35	33,975	462-0209
2,7	10,2	2,9	0,2	M16x1	(3)x8,9x8,9x28,6	54,4x 22,9x52,6	I (NFL)	•	•	•	35	33,975	462-0210
3,1	11,9	1,8	0,12	½" O.D. barbed tubes	30x32,8x21,1	35,3x54,6x45,7	I (NFL)	•	•	•	35	29,898	462-0214

Max. pressure	Max. suction flow rate	Pump connection	Working access	Overall dimensions	Flammability class	Over-temp.protection/failsafe heater control	Low level protection	Reservoir drain	Max. ambient temp.	Refrigerant	Shipping weight	Cat. No.
psi	bar	l/min		LxWxD (cm)	LxWxD (cm)	DIN 12876-1			°C		kg	
3,6	0,25	12,2	M16x1	15,7x14,2x12,7	58,9x41,1x41,1	III (FL)	•	•	35	R134a	40,77	462-0224
1,5	0,1		½" O.D. barbed tubes	15,7x14,2x12,7	58,9x41,1x43,9	I (NFL)	•	•	35	R134a	38,052	462-0223
3,6	0,25	12,2	M16x1	15,7x14,2x12,7	54,1x22,1x61,7	III (FL)	•	•	35	R134a	40,77	462-0226
1,5	0,1		½" O.D. barbed tubes	15,7x14,2x12,7	54,1x22,1x64,5	I (NFL)	•	•	35	R134a	38,052	462-0225
3,6	0,25	12,2	M16x1	15,7x14,2x12,7	54,1x22,1x61,7	III (FL)	•	•	35	R134a	40,77	462-0227
3,6	0,25	12,2	M16x1	15,7x14,2x12,7	54,1x22,1x61,7	III (FL)	•	•	35	R404a	40,77	462-0228
3,6	0,25	12,2	M16x1	15,7x14,2x12,7	54,1x22,1x61,7	III (FL)	•	•	35	R404a	40,77	462-0229
3,6	0,25	12,2	M16x1	21,2x27,6x14	56,9x36,8x68,3	III (FL)	•	•	35	R404a	53,454	462-0230
3,6	0,25	12,2	M16x1	21,2x27,6x14	56,9x36,8x68,3	III (FL)	•	•	35	R404a	53,454	462-0231
3,6	0,25	12,2	M16x1	21,2x27,6x14	56,9x36,8x68,3	III (FL)	•	•	35	R404a	53,454	462-0232
3,6	0,25	12,2	M16x1	21,2x27,6x14	56,9x36,8x68,3	III (FL)	•	•	35	R404a	53,454	462-0233
3,6	0,25	12,2	M16x1	25x31,6x14	61x41,9x68,3	III (FL)	•	•	35	R404a	58,89	462-0234
3,6	0,25	12,2	M16x1	25x31,6x14	61x41,9x68,3	III (FL)	•	•	35	R404a	58,89	462-0235
3,6	0,25	12,2	M16x1	31,4x35,9x14	67,2x45,7x68,3	III (FL)	•	•	35	R404a	66,138	462-0236
3,6	0,25	12,2	M16x1	31,4x35,9x14	67,2x45,7x68,3	III (FL)	•	•	35	R404a	66,138	462-0237
3,6	0,25	12,2	M16x1	54,9x39,8x14	90,9x56,8x107	III (FL)	•	•	35	R134a	81,54	462-0238
3,6	0,25	12,2	M16x1	54,9x39,8x14	90,9x56,8x107	III (FL)	•	•	35	R134a	81,54	462-0239

## Heating circulators



Stainless steel circulating baths with choice of Advanced Programmable or Advanced Digital temperature controller. Both are easy to navigate with large, intuitive displays and multiple communication options including USB-A & B, RS232/485, Ethernet and external temperature probe. The reservoir drain can be accessed by removing the front panel. All models feature user-adjustable high temperature safety cut-off points as well as over-temperature protection. The DuraTop™ surface is cool to the touch even when operating at high temperatures.

**Advanced Digital** models feature an intuitive 9,5 cm display with touch pad control, single point calibration, menus and prompts in 4 languages: French, German, Spanish and English.

**Advanced Programmable** models have an intuitive 10,9 cm SmartTouch display, 5-point calibration capability, menus and prompts in 6 languages: French, German, Spanish, English, Chinese and Arabic, plus time/temperature programming (ten 100-step programs).

- Working temperatures from ambient +10 to 200 °C with stability of  $\pm 0,01$  °C
- Variable speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™ rotating controllers, LidDock™ lid stowing system and DuraTop™ chemically resistant deck
- Event scheduling (time and date), real time clock and temperature trends for up to 10 days with Advanced Programmable models
- Selectable home screens and on-screen help
- Automatic and/or user-adjustable performance optimisation

Comply with DIN 12876-1, Safety Class III

Maximum pump capacities:

16,7 l/min, 250 mbar; suction: 12,2 l/min

**Delivery information:** Supplied with a reservoir cover, bypass tubing, male inlet and outlet adapters for 47, 63 and 95 mm tubing, ¼" to M16 adapters are also included.

For probes and accessories, please visit [vwr.com](http://vwr.com).



Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath WxDxH (mm)	WxDxH (mm)	Pk	Cat. No.
<b>Models with Advanced Digital temperature controller</b>								
AD07H200	RT* +10...200	$\pm 0,01$	2,2	7	142x157x127	221x499x409	1	462-0215
AD15H200	RT* +10...200	$\pm 0,01$	2,2	15	276x212x140	368x569x422	1	462-0217
AD20H200	RT* +10...200	$\pm 0,01$	2,2	20	316x250x140	419x610x422	1	462-0219
AD28H200	RT* +10...200	$\pm 0,01$	2,2	28	359x314x140	457x672x422	1	462-0221
<b>Models with Advanced Programmable temperature controller</b>								
AP07H200	RT* +10...200	$\pm 0,01$	2,2	7	142x157x127	221x499x409	1	462-0216
AP15H200	RT* +10...200	$\pm 0,01$	2,2	15	276x212x140	368x569x422	1	462-0218
AP20H200	RT* +10...200	$\pm 0,01$	2,2	20	316x250x140	419x610x422	1	462-0220
AP28H200	RT* +10...200	$\pm 0,01$	2,2	28	359x314x140	457x672x422	1	462-0222

Description	Pk	Cat. No.
<b>Remote temperature probes for VWR circulators</b>		
PT100 probe with 0,6 m cable	1	462-0271
PT100 probe with 3 m cable	1	462-0272
PT100 probe with 7,6 m cable	1	462-0273
PT100 probe with 15 m cable	1	462-0274

(\* RT = Ambient)

## Refrigerated circulating baths with MX temperature controller



Stainless steel baths with user friendly MX temperature controller with three control buttons and on-screen prompts. Baths can be used for external closed loop circulation. The controller rests on a chemically resistant DuraTop™ deck, which is cool to the touch even when working at high temperatures and units feature LidDock™ lid stowing system. Cool Command™ technology regulates the amount of cooling required, saving energy while providing rapid cooling and precise control at elevated temperatures.

- Large EasyView™ LCD display with alarm or fault icons and English prompts and menus
- User-adjustable high and low temperature limits and low liquid level alarms
- Single speed pressure pump with external closed loop circulation capability
- Integral pump and heater coil protection
- Single point calibration

Complies with DIN 12876-1, Safety Class I

Maximum pump capacities:  
11,9 l/min, 120 mbar

**Delivery information:** Supplied with a reservoir cover, bypass tubing, male inlet and outlet adapters for 47, 63 and 95 mm tubing, ¼" to M16 adapters are also included.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath WxDxH (mm)	WxDxH (mm)	Pk	Cat. No.
MX7LR-20 (low profile)	-20...+135	±0,07	1,1	0,2	7	142x157x127	411x589x439	1	462-0223
MX07R-20	-20...+135	±0,07	1,1	0,2	7	142x157x127	221x541x645	1	462-0225

Note: Cooling capacity at 20 °C

### VWRCATALYST SERVICES

Delivering complete solutions in and around the laboratory and production area

Please visit us at: [vwr.com/vwrcatalyst](http://vwr.com/vwrcatalyst)



## Refrigerated circulators



Stainless steel circulating baths with choice of Advanced Programmable or Advanced Digital temperature controller. Both are easy to navigate with large, intuitive displays and multiple communication options including USB-A & B, RS232/485, Ethernet and external temperature probe. The reservoir drain can be accessed by removing the front panel. All models feature user-adjustable high temperature safety cut-off points as well as over-temperature protection. The DuraTop™ surface is cool to the touch even when operating at high temperatures.

**Advanced Digital** models feature an intuitive 9,5 cm display with touch pad control, single point calibration, menus and prompts in 4 languages: French, German, Spanish and English.

**Advanced Programmable** models have an intuitive 10,9 cm SmartTouch display, 5-point calibration capability, menus and prompts in 6 languages: French, German, Spanish, English, Chinese and Arabic, plus time/temperature programming (ten 100-step programs).



- Working temperatures from  $-40$  to  $+200$  °C with stability of  $\pm 0,01$  °C (except 45 litre models with maximum 135 °C)
- Variable speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™ rotating controllers, LidDock™ lid stowing system, DuraTop™ chemically resistant deck and WhisperCool™ environmental control system reduces noise, increases refrigeration efficiency and lowers energy consumption
- Cool Command™ technology regulates the amount of cooling required, saving energy while providing rapid cooling and precise control at elevated temperatures
- Event scheduling (time & date), real time clock and temperature trends for up to 10 days with Programmable models
- Selectable home screens and on-screen help
- Automatic and/or user-adjustable performance optimisation

Comply with DIN 12876-1, Safety Class III

Maximum pump capacities:

16,7 l/min, 250 mbar, 12,2 l/min suction

**Delivery information:** Supplied with a reservoir cover, bypass tubing, male inlet and outlet adapters for 47, 63 and 95 mm tubing, 1/4" to M16 adapters are also included. For probes and accessories, please visit [vwr.com](http://vwr.com) or contact your local VWR sales office.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath WxDxH (mm)	WxDxH (mm)	Pk	Cat. No.
<b>Models with Advanced Digital temperature controller</b>									
AD7LR-20	-20...+200	$\pm 0,01$	2,2	0,2	7	142x157x127	411x589x411	1	462-0224
AD07R-20	-20...+200	$\pm 0,01$	2,2	0,2	7	142x157x127	221x541x617	1	462-0226
AD07R-40	-40...+200	$\pm 0,01$	2,2	0,36	7	142x157x127	221x541x617	1	462-0228
AD15R-30	-30...+200	$\pm 0,01$	2,2	0,915	15	276x212x140	368x569x683	1	462-0230
AD15R-40	-40...+200	$\pm 0,01$	2,2	1,0	15	276x212x140	368x569x683	1	462-0232
AD20R-30	-30...+200	$\pm 0,01$	2,2	0,915	20	316x250x140	419x610x683	1	462-0234
AD28R-30	-30...+200	$\pm 0,01$	2,2	0,915	28	359x314x140	457x672x683	1	462-0236
AD45R-20	-25...+135	$\pm 0,01$	2,2	1,4	45	398x549x140	568x 909x 1070	1	462-0238
<b>Models with Advanced Programmable temperature controller</b>									
AP07R-20	-20...+200	$\pm 0,01$	2,2	0,2	7	142x157x127	221x541x617	1	462-0227
AP07R-40	-40...+200	$\pm 0,01$	2,2	0,36	7	142x157x127	221x541x617	1	462-0229
AP15R-30	-30...+200	$\pm 0,01$	2,2	0,915	15	276x212x140	368x569x683	1	462-0231
AP15R-40	-40...+200	$\pm 0,01$	2,2	1,0	15	276x212x140	368x569x683	1	462-0233
AP20R-30	-30...+200	$\pm 0,01$	2,2	0,915	20	316x250x140	419x610x683	1	462-0235
AP28R-30	-30...+200	$\pm 0,01$	2,2	0,915	28	359x314x140	457x672x683	1	462-0237
AP45R-20	-25...+135	$\pm 0,01$	2,2	1,4	45	398x549x140	568x 909x 1070	1	462-0239

Note: Cooling capacity at 20 °C



## Remote temperature probes for VWR circulators

Remote temperature probes for use with circulators with a programmable controller. Permit points of control to be switched from inside a programmable circulator bath to a remote location, such as an open tank. Compensates for heat loss through tubing between the circulator and the control point. Platinum RTD sensor with stainless steel sheath. Rubber coupling with 25,4 mm Ø, connects sheath to flexible cable. Probe cable ends in a DB9 female plug.

LengthxØ: 152x4 mm

Description	Pk	Cat. No.
Remote temperature probe, 3 metre cable	1	461-0101
Remote temperature probe, 7,6 metre cable	1	461-0102
Remote temperature probe, 15,25 metre cable	1	461-0103

## Circulating chillers



These circulating chillers are an environmentally friendly, water-conserving and a reliable means of controlling the temperature of liquids in open tanks or closed loop systems. They provide high cooling performance at low cost. With a temperature range from -10 to +40 °C, they are ideally suited for many process and routine applications. There are two pump versions available, with a wide choice of cooling volumes and compressor sizes to suit special applications. The devices are characterised by readily programmable, bright LED displays that can be read easily and comfortably. The standard, magnetically-coupled centrifugal pumps (MD model series) generate a high flow rate at relatively low pressure. The positive displacement pumps (PD model series) have a lower flow rate, but provide higher, adjustable pressures for more demanding applications. The modulating system maintains stable temperatures, even under fluctuating load conditions.

The circulating chillers provide a temperature stability of ±0,1 °C.

Dimensions (WxHxD): 368x575x702 mm

- Exceptional cooling performance and wide temperature range from -10 to +40 °C
- Extra large digital display for easy reading of the set temperature, the flow rate and/or the pressure even from a distance
- Optical and acoustic alarm function if any of the set parameters are not maintained
- Adjustable low and high temperature limits, low fluid level alarm function, temperature stability with easy to operate calibration function and optional interfaces for various functions, such as remote control

Max. flow rate / max. pressure:

MD: 14,7 l/min, 0,66 bar

PD: 3,6 l/min, 5,7 bar

**Delivery information:** Supplied with ½" lockable NPT inlet and outlet fittings and lockable castors. Each unit is supplied complete with three plugs: EU, UK and CH for use throughout Europe. Please contact your local VWR sales office for details of options and accessories.



Type	Cooling capacity (kW)	Pk	Cat. No.
<b>MD models with magnetically coupled centrifugal pump</b>			
1171MD	0,66/0,44/0,16*	1	462-7033
1173MD	0,99/0,74/0,41*	1	462-7035
1175MD	1,41/0,91/0,62*	1	462-7036
1177MD	2,07/1,41/0,63*	1	462-7038
1179MD	2,40/1,59/0,83*	1	462-7040
<b>PD models with positive displacement pump</b>			
1171PD	0,66/0,44/0,16*	1	462-7032
1173PD	0,99/0,74/0,41*	1	462-7034
1175PD	1,41/0,91/0,62*	1	462-7037
1177PD	2,07/1,41/0,63*	1	462-7039
1179PD	2,40/1,59/0,83*	1	462-7041

\* Cooling capacity at +20, +10 and 0 °C

## Recirculating chillers, RC-10 range



RC-10 Basic



RC-10 Digital



RC-10 Duo

VWR recirculating chillers are ideal for use with rotary evaporators, as they ensure constant, reproducible cooling conditions and avoid wasting tap water thereby increasing cost savings. Designed to be user friendly, the units have an easily accessible filling port on top of the unit and a drain tap at the back. The chillers have a stainless steel reservoir, operate using R134 refrigerant and can be used in the permitted ambient temperature range of 15 to 32 °C.

- Temperature set point can be adjusted by using the keys on the command panel (except the Basic model which has a fixed set point at 7 °C)
- The Duo chiller can cool two cooling cycles directly connected on the double outlets and inlets
- Regulate the temperature of the cooling cycle between –10 and +40 °C (use water and glycol mixture (70:30 mixture) for temperatures below +5 °C)
- Indicator on front panel for perfect visualisation of liquid level

Max. flow rate (with no counter pressure)/max. pressure (at zero flow)

RC-10 Basic 14 l/min, 0,4 bar

RC-10 Digital 8 l/min, 0,6 bar

RC-10 Duo 11 l/min, 1,0 bar

**Delivery information:** Basic and Digital units supplied with 2x8 Ø mm hose connections, 2x screw nuts M 16 x 1, 2x PVC hose (1500 mm) and 2x hose clamps, Duo models have four of each of these. Include EU, UK and CH power cables.

Type	Temp. range (°C)	Temp. stability	Cooling capacity (kW)	Capacity (l)	WxDxH (mm)	Pk	Cat. No.
RC-10 Basic	7*	±2 K	0,5	3,5	280x360x520	1	462-0137
RC-10 Digital	-10...+40	±0,5 K	0,5	3,5	280x370x490	1	462-0138
RC-10 Duo	-10...+40	±0,5 K	0,95	3,5	350x420x600	1	462-0139

\* Fixed

Note: Cooling capacity at +15 °C

## Viscosity baths



Viscosity baths for use with popular capillary viscometers are configured to accommodate specific testing and quality control needs, including ASTM D-445. Choice of models with round or square top openings. These transparent polycarbonate baths with user friendly SD temperature controller feature four control buttons and on-screen prompts in French, German, Spanish and English. Controller bridge made from chemical resistant DuraTop™ is easily removed to clean the tank.

- Large EasyView™ LCD display with alarm or fault icons and prompts and menus in four languages: French, German, Spanish and English
- Swivel 180™ rotating controllers, LidDock™ lid stowing system and DuraTop™ chemically resistant deck
- User-adjustable high and low temperature limits and low liquid level alarms
- Two speed pressure pump with tap water cooling coil
- Single point calibration

Comply with DIN 12876-1, Safety Class I

Maximum pump capacities:  
10,2 l/min, 200 mbar

**Delivery information:** Supplied with lids for viscometer openings.  
For probes and accessories, please visit vwr.com



Model	Round holes	Square holes
Temperature range (°C)	Ambient +10...85	
Temperature stability (°C)	±0,04	
Display resolution	±0,01	
Viscometer positions	5	3
Bath material	Polycarbonate	
Bath capacity (l)	29	
Bath depth (mm)	286	
WxDxH (mm)	229x544x526	

Description	Pk	Cat. No.
Viscosity bath with 5 round holes for viscometers, SD temperature controller	1	462-0209
Viscosity bath with 3 square holes for viscometers, SD temperature controller	1	462-0210

Description	Pk	Cat. No.
<b>Spare lids</b>		
Spare lid with 5 round holes and covers, for VWR viscosity baths (462-0209 or 462-0210)	1	462-0289
Spare lid with 9 round holes and covers, for VWR viscosity baths (462-0209 or 462-0210)	1	462-0290
Spare lid with 3 square holes and covers for VWR viscosity baths (462-0209 or 462-0210)	1	462-0291

## Coliform bath with MX temperature controller



Stainless steel bath with user friendly MX temperature controller with three control buttons and on-screen prompts. Specifically designed for production of microbiological culture media. The controller bridge made from chemical resistant DuraTop™ is easily removed to allow cleaning of the tank. The bath has an opening with lid for optional cooling coil which is ideal for set points near ambient temperature.

- Large EasyView™ LCD display with alarm or fault icons and English prompts and menus
- User-adjustable high and low temperature limits and low liquid level alarms
- Single speed pressure pump
- Integral pump and heater coil protection
- Single point calibration

Complies with DIN 12876-1, Safety Class I

Maximum pump capacities:  
11,9 l/min, 120 mbar

**Delivery information:** Supplied with hinged, see-through bath cover.



Type	Temp. range (°C)	Temp. stability	Heating capacity (kW)	Capacity (l)	Bath WxDxH (mm)	WxDxH (mm)	Pk	Cat. No.	
MX28C135	RT* +10... 135	±0,07	1,1	28	328x300x210	546x353x457	1	462-0214	
<b>Description</b>	<b>For</b>						<b>Pk</b>	<b>Cat. No.</b>	
<b>Accessories</b>	Cooling coil						Use with VWR baths, 462-0207, 462-0208, 462-0212, 462-0213 and 462-0214	1	462-0279

\* RT = Ambient

## Slide warmer/dryer for histology slides, W10



The W10 heating plate with its sleek, compact design accommodates two rows of up to 40 slides in total. The heating plate is very useful as a stretch bench for mounting, stretching and drying paraffin sections on slides, fixing bacterial smears and heating fluid samples in Petri dishes. The black anodised surface provides an excellent visual contrast. The 8 mm thick aluminium heating plate ensures a constant and homogenous temperature over the entire heating surface. The touch display



and switch are protected from water and paraffin, the unit has over-temperature protection for extra safety. The temperature adjustment and power On/Off switch with control light for 'On' mode are conveniently located at the front of the unit.

- Electronic touch display
- Sleek and compact
- Ideal size for drying up to 40 slides
- Temperature range 30 to 89 °C

IP protection class according to DIN EN 60529: IP 21

Temperature range (°C)	RT*...89
Thermostat	Digital
Accuracy (°C)	±1,0
Exterior WxDxH (mm)	146x486x70
Weight (kg)	3,1
Power (W)	260

Description	Pk	Cat. No.
Slide warmer/dryer for histology slides, W10 * RT = Ambient	1	720-2422

## Histology water bath, W20



The reliable W20 histology water bath is ideal for removing wrinkles and distortions in paraffin wax sections which are created during sectioning. The unit's low profile is ergonomic, provides a clear view and allows safe handling of the sections. The indirectly heated flat areas at the front and back of the bath provide a suitable space for drying up to 20 slides. The touch temperature adjustment and power On/Off switch with a control light for 'On' mode, are conveniently located at the front of the unit and protected from water.

- Electronic touch display
- Lightweight, compact and efficient size means it is easy to empty out water
- Double function with heated surface for drying up to 20 slides
- Adjustable temperature range 30 to 70 °C
- Optional lid to prevent evaporation and dust contamination when not in use

**Ordering information:** Supplied without lid which, if required, must be ordered separately.

Temperature range (°C)	30...70
Thermostat	Digital
Accuracy (°C)	±1
Exterior WxDxH (mm)	247x280x78
Internal WxDxH (mm)	198x156x60
Weight (kg)	2,4
Power (W)	190



Description	Pk	Cat. No.
Histology bath W20	1	720-2423

## SERVICE AND MAINTENANCE

### Assured accuracy for your thermometers and data loggers with our accredited calibration and repair service

Reliable and accurate measurements are essential for maintaining the quality standard that you want to have for your laboratory research, quality control and production processes.

We can help you to rely on the results of your measurements, by providing calibration and repair services for thermometers and data loggers under the highest standards.

### One channel for the full cycle of your TEMPERATURE device

In our ISO 17025 accredited calibration facility we calibrate and adjust all brands of temperature devices like thermometers, data loggers, blocks and baths.

Our fast, efficient and competitive service examines, reports on and calibrates your instruments in addition to supplying new, calibrated thermometers and data loggers. Before calibration, all instruments are examined and checked to confirm they are free from any defects.

#### We offer these services for all brands and models:

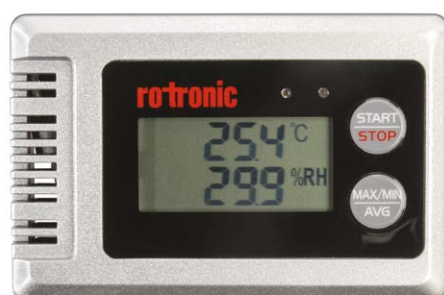
- Approved quality
- Detailed process documentation
- Replacement offers out of our wide range of premium brands
- ISO 17025: 2005 calibration certificate
- Due time reminder system
- Combination possibilities with (non accredited) humidity calibration



### Temperature measurements

For temperature measurements our ISO/IEC 17025:2005 laboratory can calibrate all types of temperature indicators, data loggers, recorders, liquid in glass thermometers and temperature sensors. All calibration services are direct traceable to a National Measurement Standard or can be certified with ISO 17025:2005 accreditation!

For more information or a quotation go to [vwr.com/vwrcatalyst](http://vwr.com/vwrcatalyst) or email [technical.services.eu@vwr.com](mailto:technical.services.eu@vwr.com).





## Water bath protective agent, Aquaresist

Prevents the growth of algae and bacteria in baths and circulating thermostats, for optimally hygienic working conditions.

- Durable: Effective for weeks, as displayed by a colour indicator
- Economical: Low consumption - only 1 ml solution per 1 litre of water

Description	Pk	Cat. No.
Water bath protective agent, Aquaresist	100 ml	462-7000

## Anti-evaporation spheres for water baths

Lightweight, economic PP spheres which form a blanket on the liquid surface. Spheres have 20 mm Ø, 275 spheres cover approximately 1000 cm<sup>2</sup>.

- Reduce heat loss by 77%, and evaporation by 87%
- Insulate like a solid, and still allow instant access to the liquid in the bath

Description	Pk	Cat. No.
Anti-evaporation spheres	100	462-7049
Anti-evaporation spheres	1.000	462-7050



620-1826

## Digital thermometers, Traceable® Digital-Bottle™

### Waterproof non toxic glycol bottle probe

These thermometers accurately monitor temperatures in freezers, refrigerators, incubators and environmental chambers. Bottle and solution insulate the sensor from transient temperature changes.

- Easy to read digital display
- Maximum/minimum and current temperatures
- Maximum/minimum monitoring for any time period

WxDxH: 56x25x110 mm

Solution recognised as safe by the FDA. Calibration compliant with ISO/IEC 17025, ANSI/NCSL Z540-1 and 9001.

**Delivery information:** Supplied with individually serial numbered Traceable® calibration certificate indicating traceability to NIST, plastic holder, Velcro® and double-backed tape for wall mounting and replaceable silver oxide battery.

Range (°C)	Accuracy (°C)	Resolution (°C)	Pk	Cat. No.
-30...+50	±1,0	0,1	1	620-1826
-30...+50	±0,4 at tested points	0,1	1	620-1862



## High accuracy thermometers, TD 10, 11 and 12



### Stainless steel probe

These thermometers deliver good performance and a high level of accuracy.

- Fast measurement
- Robust and impact resistant
- Single point factory calibration certificate (620-1638, -1639: 0 °C; 620-1640: 100 °C)

WxDxH: 20x90x42 mm

Conform to IEC 584 - IP 55 (620-1638, -1639), IP 40 (620-1640)

**Delivery information:** Supplied with clip holder to carry the thermometer on a belt and a lithium three volt CR 2032 battery for approximately 100 hours when used continuously. 620-1640 should be ordered with an appropriate K type probe.

Description	Range (°C)	Accuracy (°C)	Resolution (°C)	Probe	Pk	Cat. No.
Precision HACCP thermometer TD 10	-50...+350	±0,8	0,1 (-60...+199,9); 1,0 (>200)	T (LxØ: 110x3 mm)	1	620-1639
Precision HACCP thermometer TD 11	-50...+350	±0,8	0,1 (-60...+199,9); 1,0 (>200)	T (LxØ: 110x3 mm) and cable (100 mm)	1	620-1638
TD 12 (SMP)	-60...+1200	±1,0	0,1 (-60...+199,9); 1,0 (>200)	K	1	620-1640

Description	Range (°C)	ØxL (mm)	Pk	Cat. No.
<b>Probes</b>				
Penetration probe with handle and 1 m cable, TKS 100	-200...+400	3x130	1	620-1648
Surface probe with paddle, handle and 1 m cable, TKS 200	-200...+400	7x40	1	620-1649
Immersion probe with handle and 1 m cable, TKS 300	-200...+400	3x130	1	620-1650
Penetration probe with handle and 1 m cable, TKS 400	-200...+400	4,7x130	1	620-1651

## Full scale digital thermometer, Traceable®

### K-type probe and cable (LxØ: 1200x1,5 mm)

Water resistant design for use in lab or plant's worst environment. The case of this thermometer can stop dirt, dust, fumes and water. A fast response microprocessor updates the display twice a second.

- Extra large digits (16 mm) readable from two metres away
- Minimum and maximum readings captured at any time
- Alarm in 1,0 °C increments above or below set points
- Timer from 23 hours 59 minutes to 1 minute
- 'HOLD' freeze button

WxDxH: 83x38x178 mm

Weight: 227 g

Traceable to NIST. Compliant with ISO/IEC 17025, ANSI/NCSL Z540-1 and 9001.

**Delivery information:** Supplied with protective casing with a flip-open stand, Traceable® certificate of calibration, three AAA batteries and fast response probe (620-2012).



Range (°C)	Accuracy (°C)	Resolution (°C)	Pk	Cat. No.
-200...+1370	±1,0; ±2,0 (>+740)	0,1; 1,0	1	620-2006

Description	Range (°C)	Pk	Cat. No.
<b>K-type probes</b>			
Stainless steel probe with 1 m cable	-50...+700	1	620-2005
K-type fast response probe with 1,2 m coated cable	-40...+250	1	620-2012



LABWASH PREMIUM Classic

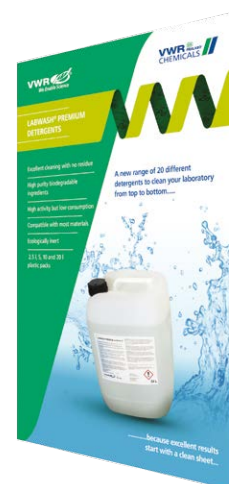
LABWASH PREMIUM Alkamatic

## Detergents and cleaning agents, LABWASH® Premium

A more concentrated version of the LABWASH® range.

- Residue-free laboratory glassware cleaning
- Excellent cleaning power at low dosage levels
- NTA-free (no Nitrilotriacetic acid)
- Protects the environment, active ingredients are biodegradable
- Acid rinse concentrates available to neutralise alkaline cleaners

**For more information, request brochure from your local VWR sales office or go to [vwr.com](http://vwr.com)**



## Microtube racks, floating

PP

For maintaining reaction vessels with capacities from 0,5 to 2 ml at constant temperature in water baths. Racks float even when full. The reaction vessels are held firmly in place in the frame and do not float. Handles are provided for easier insertion and removal from the water bath and carrying. Non autoclavable.

- Removable feet enable reaction vessels to be removed quickly and easily
- Also suitable for cryotubes with up to 2 ml capacity
- Stable, good chemical resistance



For tubes (ml)	No. of holes	Form	Ø (mm)	WxDxH (mm)	Colour	Pk	Cat. No.
1,5/2,0	8	Round	68	-	White	4	211-0225
0,4/0,5	16 (4x4)	Square	-	102x102x60	Black	4	211-0224
1,5/2,0	16 (4x4)	Square	-	102x102x60	White	4	211-0223
1,5/2,0	20	Round	98	-	White	4	211-0226



## Racks and boxes for microcentrifuge tubes and cryogenic vials



Recycled plastic, autoclavable

24- and 48-place microcentrifuge tube and cryovial storage system. For 1,5 ml and 2,0 ml tubes. Fully autoclavable (122 °C) and freezable (-90 °C).

- Racks fit into VWR pipette tip boxes
- Stackable racks that float, ideal for water baths
- Boxes with clear cover

No. of holes	Description	Pk	Cat. No.
48	Rack in hinged box with lid	5	479-0075
24	Rack in hinged box with lid	10	479-0076
24	Rack, without box	10	479-0077
-	Hinged box for 2x24 place racks, without racks	5	479-0078



## Ring weights for vessels

### Lead core, with blue vinyl coating

Open or closed design. Open design, also suitable for vessels with lateral connections. For stabilising glass or plastic vessels on shakers or in water and oil baths, etc. The weights prevent tipping. The coating prevents the vessels from being scratched or causing damage to other surfaces.

- Good chemical resistance
- High temperature resistance
- Available in various sizes for use with a range of vessel sizes

For (ml)	Ø ext. (mm)	Ø int. (mm)	Weight (g)	Pk	Cat. No.
<b>Closed</b>					
Flasks 125 - 500	75	48	270	1	214-1942
Flasks 250 - 1000	90	51	500	1	214-1943
Flasks 500 - 2000	102	57	700	1	214-1944
Flasks 1000 - 4000	115	70	840	1	214-1945
<b>Open</b>					
Flasks 125 - 500	75	42	200	1	214-1891
Flasks 250 - 1000	90	51	480	1	214-1892
Flasks 500 - 2000	102	54	660	1	214-1893
Flasks 1000 - 4000	115	66	930	1	214-1894

Description	Pk	Cat. No.
<b>Accessories</b>		
Lead ring holder, holds up to 8 rings	1	214-0156

## Silicone fluids, XIAMETER® PMX-200

A range of silicone fluids recommended for use in baths. Fluids possess excellent heat transfer characteristics and cover a large temperature range from -40 to +200 °C. Low in toxicity, inert and long lasting due to their low volatility.

Note: Harmful vapours may be given off at elevated temperatures. It is advisable to use this material in a fume cupboard at temperatures greater than 140 °C.

- Non corrosive
- High flash point
- Long service life
- Low evaporation



Description	Temp. range (°C)	Viscosity (mm <sup>2</sup> /s)	Colour	Pk	Cat. No.
Dow Corning® XIAMETER® PMX-200/10 cS silicone fluid	-40...+200	10	Clear	400 g	630044R
Dow Corning® XIAMETER® PMX-200/10 cS silicone fluid	-40...+200	10	Clear	4 kg	630046T
Dow Corning® XIAMETER® PMX-200/20 cS silicone fluid	-40...+200	20	Clear	500 g	630054T
Dow Corning® XIAMETER® PMX-200/20 cS silicone fluid	-40...+200	20	Clear	5 kg	630056V
Dow Corning® XIAMETER® PMX-200/50 cS silicone fluid	-40...+200	50	Clear	5 kg	630066A
Dow Corning® XIAMETER® PMX-200/100 cS silicone fluid	-40...+200	100	Clear	500 g	630074A
Dow Corning® XIAMETER® PMX-200/100 cS silicone fluid	-40...+200	100	Clear	5 kg	630076C
Dow Corning® XIAMETER® PMX-200/100 cS silicone fluid	-40...+200	100	Clear	25 kg	630077D
Dow Corning® XIAMETER® PMX-200/100 cS silicone fluid	-40...+200	100	Clear	200 kg	630078E
Dow Corning® XIAMETER® PMX-200/350 cS silicone fluid	-40...+200	350	Clear	100 ml	630092C
Dow Corning® XIAMETER® PMX-200/350 cS silicone fluid	-40...+200	350	Clear	500 g	630094E
Dow Corning® XIAMETER® PMX-200/350 cS silicone fluid	-40...+200	350	Clear	5 kg	630096G
Dow Corning® XIAMETER® PMX-200/12500 cS silicone fluid	-40...+200	12500	Clear	5 kg	630126S

1 cS = 1 mm<sup>2</sup>/s



## Anti-foam compound, XIAMETER® ACP-1500 (EU)

Formerly known as Dow Corning Antifoam 1500, this 100% active silicone fluid containing a suspension of finely powdered silica to enhance its defoaming efficiency. Food grade antifoam.

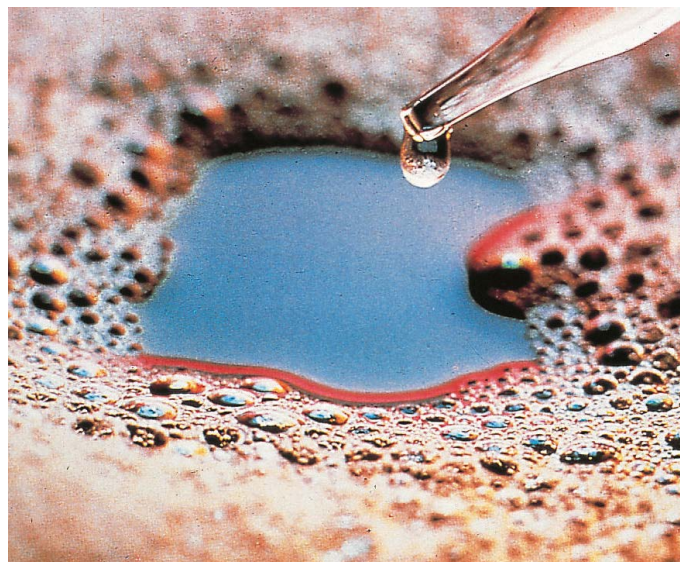
- Odourless and tasteless
- Effective in hot or cold processes
- Sterilisable
- Performs at low concentrations
- Approved for food contact - contact VWR for details
- Free of raw materials derived from animals

Description	Pk	Cat. No.
XIAMETER® ACP-1500 (EU) silicone anti-foam	500 g	632484W

## Anti-foam XIAMETER® AFE-0400 (previously Dow Corning RD emulsion)

Silicone anti-foams, available in the form of fluids, emulsions or compounds, can be used to control even resistant foams without significantly altering or contaminating products. They can be used in both aqueous and non aqueous situations throughout industry.

- Immediate foam knockdown
- Long-term foam inhibition
- Low addition levels
- Rapid dispersion in aqueous foaming systems
- Stable in textile processes at pH 4 - 11
- Foam control up to 100 °C
- Good compatibility with dye stuffs, surfactants and textile auxiliaries



Description	Pk	Cat. No.
Dow Corning anti-foam silicone emulsion, XIAMETER® AFE-0400	500 g	632134D
Dow Corning anti-foam silicone emulsion, XIAMETER® AFE-0400	5 kg	632136F
Dow Corning anti-foam silicone emulsion, XIAMETER® AFE-0400	25 kg	632137G
Dow Corning anti-foam silicone emulsion, XIAMETER® AFE-0400	200 kg	632138H

# VWR OFFERS SOLUTIONS



Autoclaving

Baths, thermostats and circulators

Centrifugation

Chairs

Chromatography reagents and consumables

Disposable gloves

Electrochemistry

Filtration

Laboratory bric-a-brac

Liquid handling

Microbiology media

Microscopy

Ovens and incubators

PCR

Pumps

Rotary evaporators

Sampling and sample transportation

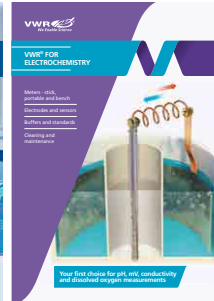
Sieves

Stirring and shaking

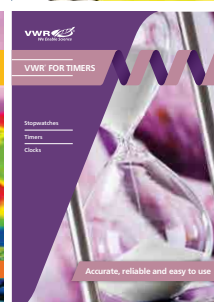
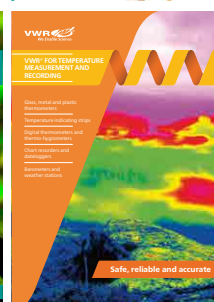
Thermometers

Timers

Weighing



**Equipment, consumables, chemicals, servicing and maintenance in one 'go to' handy guide.**



Visit [vwr.com/literature](http://vwr.com/literature)

### Austria

VWR International GmbH  
Graumannsgasse 7  
1150 Vienna  
Tel.: +43 1 97 002 0  
Fax: +43 1 97 002 600  
Email: info.at@vwr.com

### Belgium

VWR International bvba  
Researchpark Haasrode 2020  
Geldenaaksebaan 464  
3001 Leuven  
Tel.: 016 385 011  
Fax: 016 385 385  
Email: vwr.be@vwr.com

### Czech Republic

VWR International s. r. o.  
Veetee Business Park  
Pražská 442  
CZ - 281 67 Stříbrná Skalice  
Tel.: +420 321 570 321  
Fax: +420 321 570 320  
Email: info.cz@vwr.com

### Denmark

VWR International A/S  
Tobaksvej 21  
2860 Søborg  
Tel.: 43 86 87 88  
Fax: 43 86 87 90  
Email: info.dk@vwr.com

### Finland

VWR International Oy  
Valimotie 9  
00380 Helsinki  
Tel.: 09 80 45 51  
Fax: 09 80 45 52 00  
Email: info.fi@vwr.com

### France

VWR International S.A.S.  
Le Périgares – Bâtiment B  
201, rue Carnot  
94126 Fontenay-sous-Bois cedex  
Tel.: 0 825 02 30 30 (0,18 € TTC/min)  
Fax: 0 825 02 30 35 (0,18 € TTC/min)  
Email: info.fr@vwr.com

### Germany

VWR International GmbH  
Hilpertstraße 20a  
D - 64295 Darmstadt  
Freecall: 0800 702 00 07  
Fax: 0180 570 22 22\*  
Email: info.de@vwr.com  
\*0,14 €/Min. aus d. dt. Festnetz

### Hungary

VWR International Kft.  
Simon László u. 4.  
4034 Debrecen  
Tel.: (52) 521-130  
Fax: (52) 470-069  
Email: info.hu@vwr.com

### Ireland / Northern Ireland

VWR International Ltd /  
VWR International (Northern Ireland) Ltd  
Orion Business Campus  
Northwest Business Park  
Ballycoolin  
Dublin 15  
Tel.: 01 88 22 222  
Fax: 01 88 22 333  
Email: sales.ie@vwr.com

### Italy

VWR International S.r.l.  
Via San Giusto 85  
20153 Milano (MI)  
Tel.: 02-3320311  
Fax: 800 152999/02-40090010  
Email: info.it@vwr.com

### The Netherlands

VWR International B.V.  
Postbus 8198  
1005 AD Amsterdam  
Tel.: 020 4808 400  
Fax: 020 4808 480  
Email: info.nl@vwr.com

### Norway

VWR International AS  
Haavard Martinsens vei 30  
0978 Oslo  
Tel.: 22 90 00 00  
Fax: 815 00 940  
Email: info.no@vwr.com

### Poland

VWR International Sp. z o.o.  
Limbowa 5  
80-175 Gdansk  
Tel.: 058 32 38 200  
Fax: 058 32 38 205  
Email: info.pl@vwr.com

### Portugal

VWR International -  
Material de Laboratório, Lda  
Centro Empresarial de Alfragide  
Rua da Indústria, nº 6  
2610-088 Alfragide  
Tel.: 21 3600 770  
Fax: 21 3600 798/9  
Email: info.pt@vwr.com

### Spain

VWR International Eurolab S.L.  
C/ Tecnología 5-17  
A-7 Llinars Park  
08450 - Llinars del Vallès  
Barcelona  
Tel.: 902 222 897  
Fax: 902 430 657  
Email: info.es@vwr.com

### Sweden

VWR International AB  
Fagerstagatan 18a  
163 94 Stockholm  
Tel.: 08 621 34 00  
Fax: 08 621 34 66  
Email: kundservice.se@vwr.com

### Switzerland

VWR International GmbH  
Lerzenstrasse 16/18  
8953 Dietikon  
Tel.: 044 745 13 13  
Fax: 044 745 13 10  
Email: info.ch@vwr.com

### Turkey

VWR International Laboratuvar  
Teknolojileri Ltd.Şti.  
Orta Mah. Cemal Gürsel Caddesi  
Ördekcioglu İşmerkezi No.32/1  
34896 Pendik - Istanbul  
Tel.: +90 216 598 2900  
Fax: +90 216 598 2907  
Email: info.tr@vwr.com

### UK

VWR International Ltd  
Customer Service Centre  
Hunter Boulevard - Magna Park  
Lutterworth  
Leicestershire  
LE17 4XN  
Tel.: 0800 22 33 44  
Fax: 01455 55 85 86  
Email: uksales@vwr.com

### China

VWR International China Co., Ltd.  
Shanghai Branch  
Room 256, No. 3058 Pusan Road  
Pudong New District  
Shanghai 200123  
Tel.: +86-21-5898 6888  
Fax: +86-21-5855 8801  
Email: info\_china@vwr.com

### India

VWR Lab Products Private Limited  
No.139, BDA Industrial Suburb,  
6th Main, Tumkur Road, Peenya Post,  
Bangalore, India – 560058  
Tel.: +91-80-28078400  
Fax: +91-80-28078410  
Email: vwr\_india@vwr.com

### Singapore

VWR Singapore Pte Ltd  
18 Gul Drive  
Singapore 629468  
Tel: +65 6505 0760  
Fax: +65 6264 3780  
Email: sales.sg@vwr.com

GO TO **VWR.COM** FOR THE  
LATEST NEWS, SPECIAL OFFERS  
AND DETAILS OF YOUR LOCAL  
VWR DISTRIBUTOR