



Heat-On[™] Block System



The fastest, safest and cleanest way to heat and stir round bottom flasks from 10 ml to 5 litre

Accelerating chemistry



Heat-On Block System

Safer, cleaner, greener and faster heating

It is widely accepted that oil baths and heating mantles are no longer the preferred choice of chemists to heat round bottom flasks. The risk of oil fires and injury from hot oil spills, plus the mess associated with the use of oil means that oil baths no longer represent safe working practice in labs.

Key benefits

- · Replace messy, dangerous and costly oil baths or heating mantles
- Eliminate the risk of oil fires and injury from hot oil spills
- Avoid hot spots with reliable, even heating every time

Key features

- Solid aluminium blocks provide even heating
- Lightweight design allows rapid heating
- · Uniquely shaped well design eliminates cracking of flasks
- Blocks feature two probe holes and optional lifting handles
- Choice of chemically resistant fluoropolymer coating or low cost anodised finish
- Accept Florentine flasks
- Use up to 260 °C

Energy efficient and saves you money

- Using 30% less energy than the leading competitor when boiling water over a 7-hour period, saving you money and reducing the environmental impact
- For a 1 and 3-year comparison of the cost of using a Heat-On Blocks and Oil Baths please see the table on the next page.

Heats faster

- In a controlled test a 2000 ml Heat-On block and flask containing 1000 ml flask of water boiled 66% faster than the leading competitor
- Tests have shown Heat-On can boil a 250 ml flask of water in under 10 minutes, faster than an oil bath and faster than other brands of heating blocks

Heat-On Heated Vacuum Desiccator

A compact, versatile alternative to vacuum ovens, allowing you to keep your samples in the fumehood

- Reducing the chance of cross contamination of samples
- Reducing odours in the lab
- Individual temperature control
- Two temperature probe holes (accepts 3 mm ø probe)
- Continuous vacuum (not a shared resource)
- Chemical resistant fluoropolymer coating
- Internal dimensions 110 mm diameter x 70 mm height
- Push fit tubing with quick connect coupling





The widest range available



Annodised and fluoropolymer coated block options



Multi-Well Block accepts small flasks from 10 ml





Heat-On saves money compared with oil baths The cheaper alternative to oil baths

Not only does heating oil pose a safety risk, but it is also expensive to buy and dispose of.

Over time the oil will discolour and degrade due to thermal ageing and contamination from chemicals, water and general debris, and will give off smoke and fumes particularly if regularly heated to high temperatures. Regular replacement of the oil is therefore necessary to maintain a safe working environment.

A cost compaison shows that over a 3 year period Heat-On saves money

Description	Cost of Heat-On Block	Flask Size	Quality of oil required	Total cost of oil and disposal over 1 year*	Total cost of oil and disposal over 3 years*	Heat-On saving over 3 years	
250ml Heat-On Block (Fluoropolymer Coated, RR61040)	€287	250 ml	0	€0	€0	E112	
1 Litre Oil Bath for 250ml Flask	-	250 ml	0.62 L	€233	€699	t41 2	
500ml Heat-On Block (Fluoropolymer Coated, RR61045)	€299	500 ml	0	€0	€0	6760	
2 Litre Oil Bath for 500ml Flask	-	500 ml	0.94 L	€353	€1059	€/60	
1 Litre Heat-On Block (Fluoropolymer Coating, RR61050)	€319	1 L	0	€0	€0	£1210	
4 Litre Oil Bath for 1 Litre Flask	-	1 L	1.75 L	€655	€1686	£1310	
2 Litre Heat-On Block (Fluoropolymer Coating, RR61055)	€437	2 L	0	€0	€0	6 4270	
4 Litre Oil Bath for 2 Litre Flask	-	2 L	1.83 L	€685	€1764	€1370	

*Based on 2 oil changes per year. Average cost of oil per litre = €186. Average cost of oil disposal per litre = €2.



"We purchased the Heat-On blocks in our continued efforts to improve safety in the lab, replace expensive oils and to reduce environmentally harmful oil waste."

Senior Chemist Leading 'green' University, Austrailia

Case study: Heat-On replaces unsafe oil baths at a leading Australian University

Replace expensive oils and remove environmentally harmful oil waste

Situation

Oil baths were being used to heat reaction mixtures, but with the high cost of silicone oils, laboratory staff were using less safe paraffin oils. Also, a relatively inexpensive alternative seemed to polymerize with monotonous regularity.

Objective

Replace expensive oils, improve safety in the teaching and research labs and importantly, reduce environmentally harmful oil waste.

Results

After investigating blocks from different suppliers Heat-On was chosen for several reasons. The main reason was that unlike 'nested' systems the 250 ml, 500 ml, 1 litre, 2 litre and 3 litre came as stand-alone blocks, so more than one person could perform a reaction at a time. Another block system had several 'nested' sizes, needing the 1 litre block with a 250 ml insert to do a 250 ml reaction, precluding anyone else doing another reaction as the base block was already in use.

Why choose Heat-On?

Not all block designs are the same

Heat-On is simple to use and incorporates subtle design features that combine to make it head-and-shoulders above the rest. Here are some of those features:

- Fluoropolymer coating for increased chemical resistance compared with anodised blocks.
- Lightweight with a lower thermal mass producing significantly faster heat up times and faster post synthesis cool down times.
- Features proprietary well design that eliminates the sticking and cracking of flasks that is associated with other inferior blocks. The design allows Heat-On blocks to have deeper wells that maximise the heated surface area to improve heat up times and minimise the differential between the block and solution temperature.
- These thermal features ensure Heat-On is more efficient, using less energy to achieve the same results, saving money and reducing the environmental impact.
- Heat-On features optional, detachable safety lifting handles.

Heat-On uses up to 30% less energy to heat

A series of controlled heating tests were undertaken to establish the energy consumption of Heat-On and another heating block, Brand A.

Heat-On vs Brand A, 500 ml block 500 ml flask, 200 ml water		Heat-On v 2000 ml flasi	rs Brand A, 2000 ml block k, 1000 ml water
Result:	7 hours at 100 °C for Heat-On = 0.87 kWh 7 hours at 100 °C for Brand A = 1.24 kWh	Result:	7 hours at 100 °C for Heat-On = 1.64 kWh 7 hours at 100 C for Brand A = 1.84 kWh
Conclusion:	Heat-On used 30% less energy	Conclusion:	Heat-On used 11% less energy

Tests show that Heat-On heats hotter, faster

A series of controlled heating tests were undertaken to establish the heat-up times of Heat-On and another heating block, Brand A, at 100 ml, 500 ml and 2000 ml.

The results showed that the water in Heat-On reached temperature faster and in one case reached the desired temperature when Brand A did not.



Wide variety of sizes



Safety lifting handles



Heat-On accepts flasks with side-arms

Results: Heat-On Vs Brand A





What are the benefits?

- No risk of flooding from running water
- Eliminate the cost of water purchase and disposal
- For solvent volumes from 5 ml up to 1 litre
- Helps meet sustainable water reduction targets



Choice of B14, B19, B24 and B29 joint sizes



Findenser[™]- prevents flooding and saves water Replaces water-cooled condensers in over 95% of common chemistry applications

How does Findenser work?

- Findenser comprises an internal glass condenser and an external, finned aluminium jacket, between which a small amount of water is permanently sealed.
- The glass condenser design has a greater internal surface area than traditional air condensers, increasing heat transfer capacity.
- The finned jacket fits around the glass condenser, further increasing the external surface area.





Radleys Shire Hill, Saffron Walden, Essex, CB11 3AZ. United Kingdom

Heat-On PTFE safety covers

Reduce the risk of burns and lower energy consumption

Features include

- Reduces the temperature of contact surface areas by up to 50%
- 15% lower energy consumption with PTFE insulation
- Chemically resistant PTFE withstands temperatures up to 260 °C
- Removeable: Fits precisely over your Heat-On Block
- · Helps prevent spills of solvents onto hot surfaces

Removable and easy to use

These PTFE Safety Covers simply slide over the top of your Heat-On block, allowing temperature probes and handles to be used as normal.

Improved safety

Manufactured from solid PTFE, safety covers provide an insulating barrier between the user and the 'hot' Heat-On blocks. Tests show that the temperature difference between the outside surface of the PTFE cover and the Heat-On block can be as much as 100 °C.

Improved efficiency

The insulating properties of PTFE Safety Covers mean that up to 15% less energy is required to maintain temperatures for extended periods.

Cool-It - the unbreakable dewar

Cool-It replaces fragile glass dewars, unstable plastic bowls and keeps your chemistry colder for longer.

The compact and virtually unbreakable Cool-It insulated bowls are designed to fit onto a standard stirring hotplate to cool and stir round bottom flasks, beakers or test tubes etc.

Cool-It keeps it cooler for longer

- Cool-It will keep your sample below -70 °C for up to 5 times longer than a plastic bowl.
- Cool-It will keep your reactions below -70 °C for twice as long as a glass dewar.
- · Large and small bowl options

Unbreakable

Cool-It bowls are manufactured from a robust, chemically-resistant HDPE casing encapsulating a high quality insulated foam core. The combination of tough composite materials provides excellent insulation and (unlike fragile glass dewars) is virtually unbreakable.

Easy pour spout and handle

Cool-It's unique non-drip spout and ergonomically designed handle makes the disposal of solvents much safer and easier; avoiding accidental spillages and creating a safer working environment.







RR63005 Multi-Well cover

RR63040 100 ml cover



-78°C





RR63050 1 litre cover

RR63040 200-300 ml cover









Carousel Stirring Hotplates

800 Watt heating power with a chemically resistant top plate

Features include

- 3 Year Warranty
- 800 Watt heating power heats faster
- Hotplate temperature range: 20 to 300 °C
- Pt1000 temperature sensor for all models
- Speed range: 30 to 1400 rpm
- · Chemically resistant Kera-Disk top plate coating
- 135 mm top plate diameter
- Suitable for continuous unattended operation

Includes 3 YEAR Warranty



Model	Carousel Core+ Stirring Hotplate
Dimensions (W × H × D)	168 × 101 × 299 mm
Usable surface top plate	Ø 135 mm
Weight approx.	3 kg
Maximum permissible load	25 kg
Drive	EC motor, left-turning
Speed range	100 – 1,400 rpm
Adjustment accuracy	5 rpm
Heating power	800 W at 230 V (EU) or 600 W at 115 V (US)
Heating temperature range	20 – 300 °C
Heating control	PID
Adjustment accuracy	± 1 K
Measurement accuracy (DIN IEC 751 Class a)	± 0.2 K, plus tolerance Pt1000
Measurement resolution	± 1 K
Display	LCD display
Protection class	(EN 60529) IP42
Acoustic pressure	< 50 db(A)







Heat-On Adapter Plate for Square Hotplates

Allows you to use Heat-On heating blocks on square or rectangular stirring hotplates.

- Four adjustable sliding jaws locate around the top surface of the hotplate to hold it firmly in place.
- The Heat-On Block then locates securely on the circular protrusion on the top of the adapter.
- The adapter plate design maximises heat transfer between your hotplate and the Heat-On Block.
- Adapter plate is suitable for any square or rectangular hotplate, with dimensions from 140 x 140 mm to 200 x 200 mm.

Heat-On Adapter for 135 mm Hotplates

Heat-On Blocks have a 145 mm diameter recess in the base to locate onto the hotplate. If you have a 135 mm round hotplate, you have the option of using an adapter plate to make Heat-On fit tightly onto your hotplate.



RR91226

Pt1000 Stainless Steel Senso



RR61085 145 mm Adapter Plate for 135 mm Hotplates

Carousel Stirring Hotplates

Stirring Hotplates & Accessories

Carousel Core+ Stirring Hotplate 230v

RR91213	Carousel Core+ Stirring Hotplate 230v UK Plug
RR91213/EURO	Carousel Core+ Stirring Hotplate 230v Euro Plug
RR91213/SWISS	Carousel Core+ Stirring Hotplate 230v Swiss Plug
RR91213/USA	Carousel Core+ Stirring Hotplate 230v US Plug

Carousel Core+ Stirring Hotplate + PT1000

RR91216Carousel Core+ Stirring Hotplate + PT1000 230v UK PlugRR91216/EUROCarousel Core+ Stirring Hotplate + PT1000 230v Euro PlugRR91216/SWISSCarousel Core+ Stirring Hotplate + PT1000 230v Swiss PlugRR91216/USACarousel Core+ Stirring Hotplate + PT1000 230v US Plug

Carousel Core+ Stirring Hotplate Package 230v

RR91292Carousel Core+ Stirring Hotplate Package 230v UK PlugRR91292/EUROCarousel Core+ Stirring Hotplate Package 230v Euro PlugRR91292/SWISSCarousel Core+ Stirring Hotplate Package 230v US PlugRR91292/USACarousel Core+ Stirring Hotplate Package 230v US Plug

Consisting of the following:

RR91213	Carousel Core+ Stirring Hotplate		-
RR91226	Pt1000 S/Steel Temperature Sensor		-
RR91235	Pt1000 Clamping System - Support		
	Rod and Cable Guide	36	-
RR91238	Silicone Protective Cover		-
			-

Pt1000 Temperature Sensors and Accessories

RR91226	Pt1000 S/S Temperature Sensor
RR91227	Pt1000 Glass Coated Temperature Sensor
RR91228	Temperature Sensor Holder
RR91235	Pt1000 Clamping System - support rod and cable guide
RR91236	Pt1000 Clamping System - support rod and cable guide
	(for bath from 3 to 5 litres)
RR71127	Temp Sensor Support Rod (13mm x 500mm)
RR71125	Temp Sensor Support Rod (13mm x 340mm)
RR71120	Support Rod Hotplate Adapter (extension plate)
Hotplate Accesso	ries
RR31210	Retort Stand, 2 Position Base + 12 x 750 mm SS Rod
RR31212	Retort Stand, 2 Position Base
RR31214	Support Rod SS 12 x 600 mm No Thread
RR31216	Support Rod SS 12 x 750 mm No Thread
RR31218	Support Rod SS 12 x 1000 mm No Thread
RR71110	Retort Clamp to 85 mm
RR71115	Boss Head to 16 mm
RR71120	Support Rod Hotplate Adapter (extension plate)
RR71125	Support Rod SS 13 x 340 mm M10
RR71127	Support Rod SS 13 x 500 mm M10

Findenser Super Air Condenser All available sizes and socket types

RR31100	Findenser B24 Cone, B24 Socket
RR31102	Findenser B29 Cone, B24 Socket
RR31104	Findenser B19 Cone, B19 Socket
RR31105	Findenser Mini B24 Cone, B24 Socket
RR31107	Findenser Mini B19 Cone, B19 Socket
RR31109	Findenser Mini B14 Cone, B14 Socket

Cool-it Bowls

RR71011

RR71021

The Unbreakable Dewar



Heat-On Accessories

Cool-It Small Bowl + Free Lid

Cool-It Large Bowl + Free Lid

RR61080 RR61090 RR98906	Safety Lifting Handles (pair) Heat-On Insert Upgrade Kit (2 inserts + allen k Black Lab Marker	ey)
RR99061 RR99067	Reaction Flask Support Ring Tubing for Inert Gas or Reflux Cooling, 2 m	

PTFE Stirring Bars

RR98075 RR98091 RR95910 RR98096 RR98097 RR99064 RR99607 RR98071 RR99613 RR98070 RR95905 RR98113 RR95920 RR95921 RR95921 RR95921 RR95921 RR98095 RR71200 RR98094 RR98114	Cross Shape Stirring E Cross Shape Stirring E Cross Shape Stirring E Elliptical Stirring Bar 10 Elliptical Stirring Bar 12 Pivot Ring Stirring Bar Pivot Ring Stirring Bar Octagonal Stirring Bar Cylindrical Stirring Bar Oval Stirring Bar 40 m Oval Stirring Bar 50 m PTFE Magnetic Stir Ba PTFE Magnetic Stir Ba PTFE Magnetic Stir Ba Magnetic Stirring Bar F	Bar 10 mm, pk 40 Bar 16.5 mm Rare Earth, pk 20 Bar 30 mm, pk 5 10 mm Rare Earth, pk 40 15 mm Rare Earth, pk 20 25 mm Rare Earth, pk 10 ur 12 x 4.5 mm, pk 40 ur 15 mm, pk 40 ar 13 mm, pk 40 ar 13 mm, pk 20 ar 8 mm, pk 40 ar 12 mm Rare Earth, pk 20 nm, pk 5 Bar Evaluation Kit, pk 30 Bar Evaluation Kit, pk 30 Bar Retriever 350 mm Restrainer						
RR98075 RR9805 Cross Shape Stirring Bar 10mm 16.5mm	ARR95910 Ape Cross Shape Stirring Bar RE 30mm Stirring E	05 RR98113 R Cylindrical O Bar Stirring Bar Sti 12mm RE	R98070 RR99607 ctagonal rring Bar 13mm 12x4.5mm					
RR98071 RR99613 Pivot Ring Stirring Bar 12x6mm 15 mm	RR98096 Elliptical or Stirring Bar 10 mm RE	RR99064 Elliptical Stirring Bar 25mm RE 400	5920 yal g Bar mm					
RP98095 PTFE Magnetic Stir Bar Evaluation Kit	RR71200 PTFE Magnetic Stir Bar Evaluation Kit Evaluation Kit	RR98094 PTFE Magnetic Stirring Ber Petriever	RR98114 Stirring Bar Restrainer					
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Heat-On Blocks Range

Fluoropolymer coating

Offers superb chemical resistance and is easy to clean

Multi-Well Heat-On Block with fluoropolymer coating

RR61005	Heat-On Multi-Well Holder
RR61010	Heat-On 10 ml Insert
RR61015	Heat-On 25 ml Insert
RR61020	Heat-On 50 ml Insert
RR61025	Heat-On 100 ml Insert
RR61030	Heat-On 150 ml Insert

Multi-Tube/Vial inserts with fluoropolymer coating

RR61065	Heat-On Inserts for 8 x 16 mm Tubes
RR61066	Heat-On Inserts for 6 x 17 mm Biotage Microwave Tubes
RR61070	Heat-On Inserts for 4 x 20 mm Tubes
RR61075	Heat-On Inserts for 4 x 24 mm Tubes
RR61076	Heat-On Inserts for 2 x 1 Inch Tube
RR61077	Heat-On Inserts for 3 x 28 mm Biotage Microwave
RR61100	Heat-On Multi-Well Block System (polymer coated)
RR61101	Heat-On Multi-Well Block Basic System (polymer coated)

Multi-Well Heat-On Basic System with fluoropolymer coating

RR61001	Hea	at-C)n	M	ult	i-	Well	Ba	si	ic	S	ys	ste	m	
			~ .	~	~ -			~							

- 1 x RR61005 Heat-On Multi-Well Holder 1 x RR61015 Heat-On 25 ml Insert
- 1 X RR61015 Heat-On 25 mi Insen
- 1 x RR61020 Heat-On 50 ml Insert
- 1 x RR61025 Heat-On 100 ml Insert
- 1 x RR61085 Adapter Plate for 135 mm Hotplates

Multi-Well Heat-On System with fluoropolymer coating

RR61000 Heat-On Multi-Well System

- 1 x RR61005 Heat-On Multi-Well Holder
- 2 x RR61015 Heat-On 25 ml Insert
- 2 x RR61020 Heat-On 50 ml Insert
- 2 x RR61025 Heat-On 100 ml Insert
- 1 x RR61085 Adapter Plate for 135 mm Hotplates

Systems available without Adapter Plate for 135 mm Hotplates

RR61101 Heat-On Multi-Well Basic System

RR61100 Heat-On Multi-Well System

Heat-On Blocks with fluoropolymer coating

RR61031	Heat-On 100 ml Block with Flask Sidearm Cut-outs
RR61032	Heat-On 200 ml Florentine Block
RR61040	Heat-On 250 ml Block
RR61041	Heat-On 250 ml Block with Flask Sidearm Cut-outs
RR61042	Heat-On 300 ml Florentine Block
RR61045	Heat-On 500 ml Block
RR61046	Heat-On 500 ml Florentine Block
RR61050	Heat-On 1 Litre Block
RR61051	Heat-On 1 Litre Florentine Block
RR61055	Heat-On 2 Litre Block
RR61056	Heat-On 2 Litre Florentine Block
RR61060	Heat-On 3 Litre Block
RR61061	Heat-On 4 Litre Block
RR61063	Heat-On 5 Litre Block

Anodised coating

Heat-On blocks are also available with a lower cost anodised finish

RR62005	Heat-On Multi-Well Holder
RR62010	Heat-On 10 ml Insert
RR62015	Heat-On 25 ml Insert
RR62020	Heat-On 50 ml Insert
RR62025	Heat-On 100 ml Insert
RR62030	Heat-On 150 ml Insert

Multi-Tube/Vial inserts with anodised finish

RR62065	Heat-On Inserts for 8 x 16 mm Tubes
RR62070	Heat-On Inserts for 4 x 20 mm Tubes
RR62075	Heat-On Inserts for 4 x 24 mm Tubes

Multi-Well Heat-On Basic System with anodised finish

RR62001	Heat-On Multi-Well Basic System
	1 x RR62005 Heat-On Multi-Well Holder
	1 x RR62015 Heat-On 25 ml Insert
	1 x RR62020 Heat-On 50 ml Insert
	1 x RR62025 Heat-On 100 ml Insert
	1 x RR61085 Adapter Plate for 135 mm Hotplates

Multi-Well Heat-On System with anodised finish

RR62000 Heat-On Multi-Well System 1 x RR62005 Heat-On Multi-Well Holder 2 x RR62015 Heat-On 25 ml Insert 2 x RR62020 Heat-On 50 ml Insert 2 x RR62020 Heat-On 50 ml Insert

- 2 x RR62025 Heat-On 100 ml Insert
- 1 x RR61085 Adapter Plate for 135 mm Hotplates

Heat-On Blocks with anodised finish

RR62031	Heat-On 100 ml Block with Flask Sidearm Cut-outs
RR62032	Heat-On 200 ml Florentine Block
RR62040	Heat-On 250 ml Block
RR62041	Heat-On 250 ml Block with Flask Sidearm Cut-outs
RR62042	Heat-On 300 ml Florentine Block
RR62045	Heat-On 500 ml Block
RR62046	Heat-On 500 ml Florentine Block
RR62050	Heat-On 1 Litre Block
RR62051	Heat-On 1 Litre Florentine Block
RR62055	Heat-On 2 Litre Block
RR62056	Heat-On 2 Litre Florentine Block
RR62060	Heat-On 3 Litre Block
RR62061	Heat-On 4 Litre Block
RR62063	Heat-On 5 Litre Block

Vacuum Desiccator

Heat-On Heated Vacuum Desiccator with fluoropolymer coating		
RR68000	Heated Vacuum Desiccator System (base and lid)	
RR68002	Heated Vacuum Desiccator Base (includes quick-release fittings)	
RR68004	Heated Vacuum Desiccator Glass Lid (plastic coated)	
RR68008	Quick-Release Threaded Chrome Fitting	
RR68010	Quick-Release Probe to Barb Chrome Fitting	
RR68006	Replacement Silicone O-Ring	

Multi-Well Heat-On Block with fluoropolymer coating



Heat-On Block with fluoropolymer coating



Heat-On Heated Vacuum Desiccator with fluoropolymer coating



Multi-Well Heat-On Block with anodised coating



Heat-On Block with anodised coating



Multi-Well Systems

RR62001

Multi-Well Basic

RR62000

Multi-Well System

Multi-Well Systems

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Accelerating chemistry



International Product Guide

Innovative tools for chemical synthesis, process development, work-up and evaporation.



Carousel Stirring Hotplates

Powerful stirring and fast heating with a chemically-resistant top plate and built-in safety features



Carousel 6 Plus

Simultaneously heats/cools, stirs and refluxes multiple samples under an inert atmosphere.



Carousel 12 Plus

Simultaneously heats/cools, stirs and refluxes multiple samples under an inert atmosphere.



AVA Lab Control Software

Control and log multiple devices including stirrers, circulators, balances, pumps and temperature sensors.



Findenser SUPER Air Condenser

Replaces water-cooled condensers in over 95% of common chemistry applications.

Radleys provide innovative chemistry equipment for safer, cleaner, greener and more productive chemical research.

Visit www.radleys.com to see our full range of chemistry productivity tools.



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