vapourtec

The Flow Chemistry System You Won't Outgrow

Flexible, Precise, Productive

The Vapourtec R Series is a reliable, well proven, high performance modular system that allows you to expand your flow chemistry capability as your needs develop. This makes the most of your investment now while leaving your options open for the future.

Three key reasons for choosing Vapourtec

Unique Flexibility: Select the combination of reactors that meets your needs and add more reagent feed channels as required.

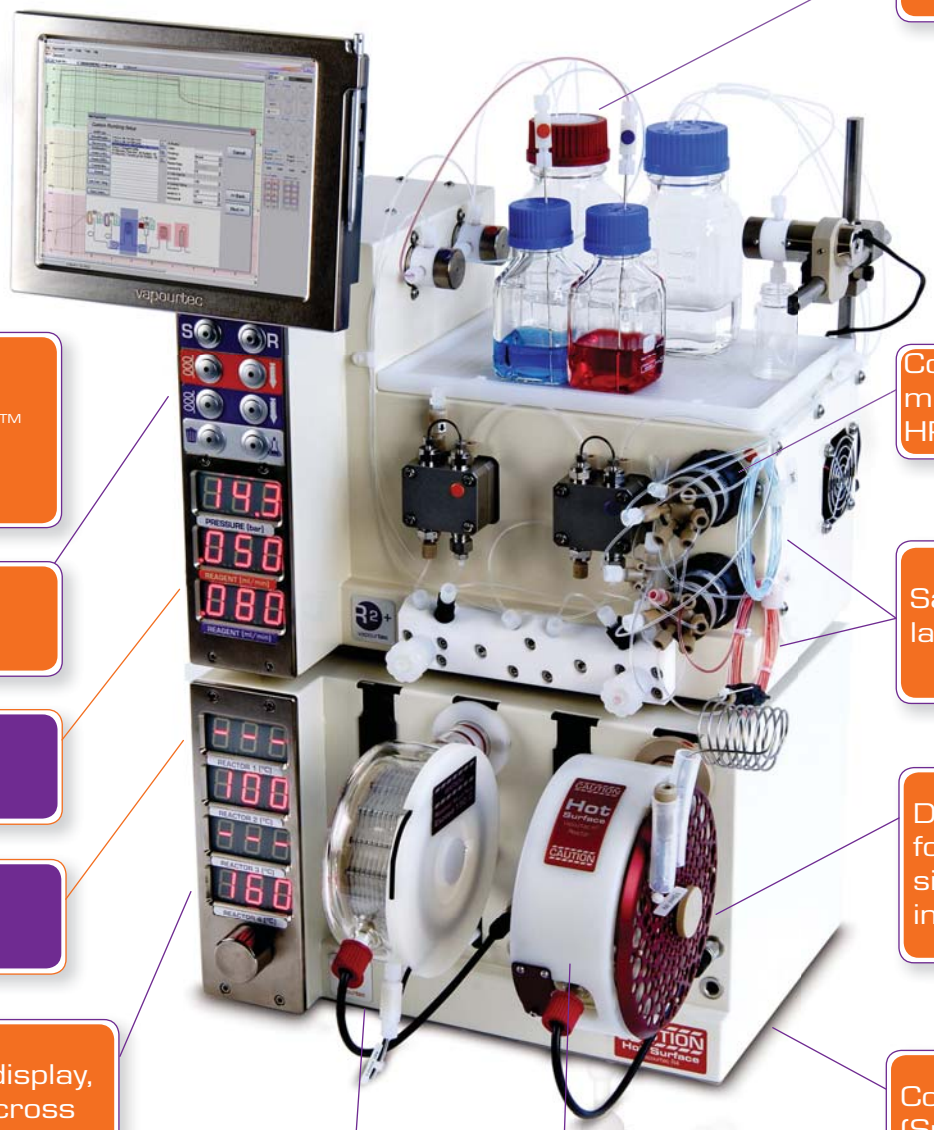
High Precision: Flow rates are guaranteed by automatic pump monitoring. Temperature control is best in class.

High Productivity: An unlimited number of reactions can be queued for unattended execution. Reaction temperatures are achieved rapidly.

The flow chemistry choice for the future

Modular system builds as required

The R Series architecture enables modules to be combined to create the exact system required. Pumping modules, reactors and collection equipment are simply added as the need arises, giving a tailored system of proven high performance components, all in a compact easy to use system.



Integral reagent tray

Optional Flow Commander™ control software and touch screen

Continuously monitored HPLC pumps

Simple manual interface

Sample loops with large injection ports

R2xx Pumping Module

Different reactors for different situations, changed in seconds

R4 Reactor Module

Large bright display, visible from across the laboratory

Compact footprint (Smaller than A3)

4 independently temperature controlled reactor positions

Forced convection heating system, full reaction visiblity

Pumping module choice

Vapourtec offer a range of options for feeding reagents into the reaction. Combining 2 pumping modules can give up to 4 reagent channels.

All pumping modules use our unique continuous automatic monitoring system to:

- Monitor performance of pumps to ensure accurate reporting of flow rates
- Shutdown safely in the event of a leak or blockage

Options include:

- sample injection loops
- strong acid capability
- slurry/suspension pumping capability

Up to 4 pumps can be integrated into a single automated system

Model	Channels	Sample Injection Loop(s)	Max pressure	Strong Acid resistant	Suspensions and slurries
R1	1	x	50 bar	x	x
R1+	1	✔	50 bar	x	x
R1C	1	x	50 bar	✔	x
R1C+	1	✔	50 bar	✔	x
R2	2	x	50 bar	x	x
R2+	2	✔	50 bar	x	x
R2C	2	x	50 bar	✔	x
R2C+	2	✔	50 bar	✔	x
R1S	1	x	10 bar	✔	✔
R1S+	1	✔	10 bar	✔	✔
R2S	2	x	10 bar	✔	✔
R2S+	2	✔	10 bar	✔	✔

Reactor choice

The R Series system allows separate temperature control of up to 4 reactors. These reactors can be combined for multi-step synthesis or used to allow increased total reactor volume, for higher throughput or longer residence times.

Reactors can be changed in seconds without the need for tools. Each is held securely within an insulated manifold.

The novel forced convection system ensures clean, accurate and efficient operation:

- Superb reaction visibility
- Clean and simple reactor setup
- Temperature measured at reactor wall, controlled to ±1°C across the full temperature range
- Rapid cooling and transition between temperature set points

The range of reactors allows easy set up of even more complex reactions.

Reactors can be changed in seconds, no tools required

Standard PFA coiled tube reactor

- Ambient to 150°C
- Strong acid resistance
- 2, 5, 10ml reactor sizes
- Residence times from 10 seconds to 200 minutes

High temperature coiled tube reactor

- Ambient to 250°C
- Coils in 316 stainless steel or Hastelloy®
- Rapid cooling for safe handling after use
- 2, 5, 10ml reactor sizes

Cooled coil reactor

- Ambient to -70°C, fully programmable
- Strong acid resistance
- No external recirculating chiller required
- Precooled reagent feeds
- Cooled mixing
- Cooled post reaction quenching

Standard column reactor

- Ambient to 150°C
- Ideal for scavenger resins, immobilised catalysts, solid supported reagents
- Accepts standard Omnifit glass columns
- Full visibility of column contents
- Precise temperature control

Cooled column reactor

- Ambient to -40°C
- No external recirculating chiller required

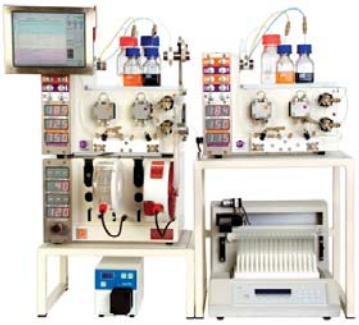
Options for expanding the R Series

Add Flow Commander™ software

- Run on separate PC or embedded touchscreen
- Speeds up experimental set up
- Logs, charts and reports reaction data gathering
- Remote instrument monitoring through LAN
- Saves reagents with dispersion calculation

Add Fraction Collector

- Automate any number of unattended reactions
- Wide range of fraction collectors supported
- Choice of number of vials collected for each reaction
- Take separate analytical samples from each fraction if required



Add additional pump channels

- Optimise proportions of up to 4 separate reagents
- Carry out multistep reactions
- Make partial additions to improve selectivity
- Automate catch and release reactions
- Online quenching
- Aqueous work-up
- Catalyst column regeneration

www.vapourtec.co.uk/products/rseriessystem/4pumps

Add an autosampler to feed in reagents

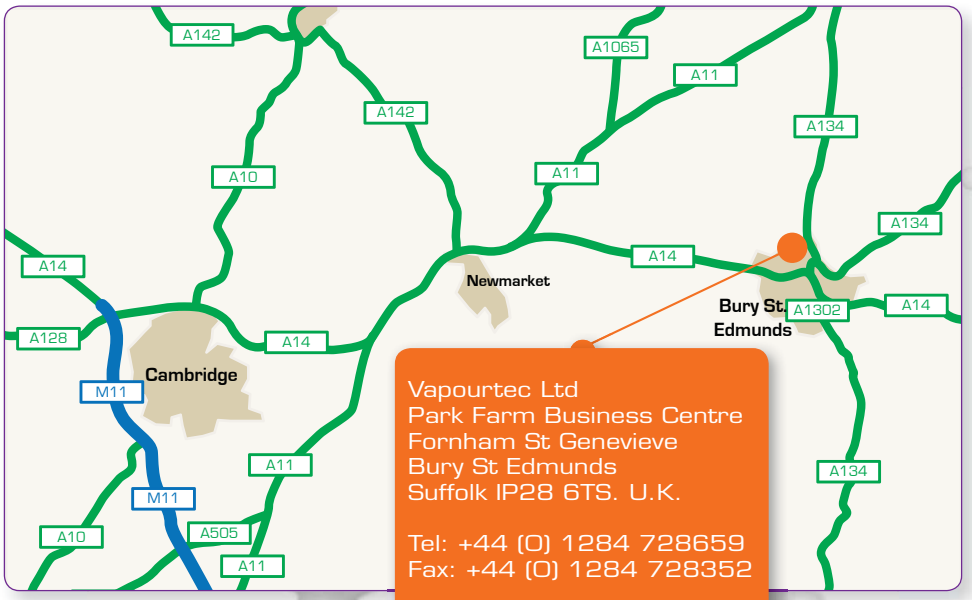
- Up to 4 reagent loops can be fed with between 0.5 and 10 ml per injection
- Autosampler can be used as a fraction collector at the same time
- Automatic generation of libraries
- Screen reagents or catalysts

Continuous innovation

The R Series flow chemistry system is designed and manufactured by Vapourtec, a technology company located near to Cambridge in the UK. Strongly focused on R&D, Vapourtec consistently leads the market in the development of new capabilities in flow chemistry, often years ahead of other vendors.

With the modular R Series platform, new developments are always backwardly compatible, ensuring that all
Vapourtec users have guaranteed access to the exciting future of flow chemistry.

Vapourtec's commitment to sound engineering ensures that reliability and robustness is built in from the start.
This is reflected in the satisfaction of our customer base, many of whom have already returned to place repeat orders.



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