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The Revolutionary E-Series Flow Chemistry System
Robust, Easy to Use, Affordable

The new Vapourtec E-Series

The new Vapourtec **E-Series** range of flow chemistry systems offers a breakthrough in simplicity and robustness while providing unprecedented value for money.

Flexible

Up to 3 reagent pumps, and 2 reactor positions which each accept the full range of tube and column reactors from the popular and well proven Vapourtec R-Series platform.

Robust

Simple, reliable and smooth pumping across a wide range of flow rates. Capable of pumping strong acids, organometallic reagents, even light suspensions.

Easy to use

Clear, intuitive touch screen user interface. Pumps that self prime. Adjustable acid compatible back pressure regulator. All up and running in seconds.

Choose the options that suit your needs

Using the same extensive set of reactors that are available for the high-end Vapourtec R-Series system, the **E-Series** offers the flexibility to take on a wide range of applications

Simple intuitive touch screen interface

Low pressure inert gas manifold

Chiller for cooled reactors

Collection valve and gantry

Two reactor positions, independently temperature controlled

Manually adjustable back pressure regulator

Wide range of reactor sizes and types, changed in seconds

Excellent Reaction visibility in tubes or columns

Robust, smooth, self priming pumps

Optional 3rd pump

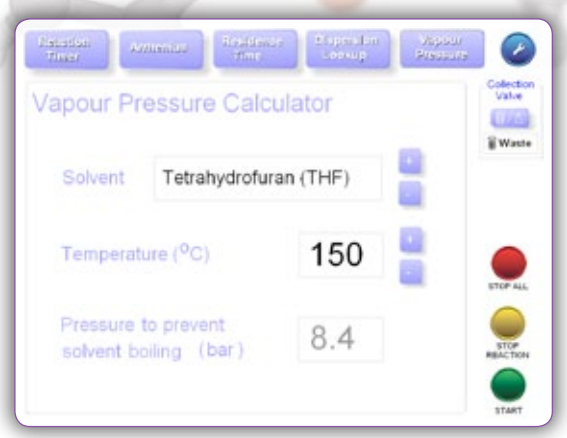
A Simple but Powerful User Interface

The **E-Series** touch screen offers a simple clear interface for immediate use with little or no learning curve.

The facilities offered by the interface range from the basic **easy-Scholar** to the more sophisticated **easy-Medchem**.

All models come with useful tools such as:

- Solvent Vapour Pressure Calculator
- Arrhenius Reaction Rate Calculator
- Residence time calculator
- Dispersion and residence time distribution tool



Robust and Reliable Pumping

At the heart of every **E-Series** system is the innovative new Vapourtec **V-3** pump, which offers

- 0.100 to 10ml/min flow rate
- Up to 10 bar delivery pressure across whole flow rate range
- Smooth continuous flow
- Automatic push-button priming
- The ability to easily pump
  - Strong acids
  - Organometallic reagents
  - Light suspensions
  - Consecutive immiscible solvents

Reactor choice

Each **E-Series** system has two reactor positions and each position can accept the full range of reactors available for the high-end Vapourtec R-Series.

Reactors can be changed in seconds without the need for tools. Each reactor coil or column is held securely within an insulated glass manifold, where the novel forced convection system ensures clean, accurate and even heating or cooling

- 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

Standard column reactor

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

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

UV-150 Photochemical reactor

- 3 different light sources provide precise wavelengths between 220 nm and 650 nm
- Temperature range from -20°C to 80°C
- Fully interlocked

Micromixer chip reactor

- -40°C to 150°C
- Borosilicate glass reactor chips
- 7 reactor configurations available
- Up to 4 reactors at one time

Other Reactors

Heated Mixer Manifold

- Used when reagents must be at operating temperature before mixing takes place
- Accepts the same spare coils as cooled reactor

Simple Stainless Steel Reactor Coils

- Ambient to 150°C
- Used when reactor must not permit any O_2 ingress, e.g. for some polymerization

Split Coils for cooled reactor

- Enables 2 reaction steps in one reactor housing
- Available in
  - 1ml:9ml
  - 3ml:7ml,
  - 5ml:5ml

One Product, Multiple Configurations

The E-Series is available in a number of configurations for different applications.

All models come ready to use with a touchscreen interface, reagent bottles, tubing, mixer(s), back pressure regulator and reactor(s). Systems can be purchased with 2 or 3 reagent pumps. There are also a range of upgrade possibilities for enhanced functionality.

Available Configurations

easy-Scholar

For undergraduate teaching and basic research

- Basic interface for teaching flow chemistry principles
- Standard tube reactor manifold with 10ml PFA coil

easy-Polymer

Continuous polymerization and nanoparticle synthesis

- Enhanced touchscreen interface for more productive operation
- Collection Valve Kit
- Stainless steel reactor for O_2 free polymer synthesis

easy-Medchem

Quick access to flow for reaction exploration and scale-up

- Enhanced touchscreen interface for productive walk up operation
- Collection Valve Kit
- Heterogeneous column reactor
- Organometallic reagent kit

Upgrade Options

Additional Pump

Convert from 2 to 3 pumps

- 3rd Pump and mounting plates
- 3rd Solvent/Reagent valve
- 3rd Reagent bottle
- Extra tubing kit and mixer

Cooled Reactor Upgrade

All that's needed to run sub ambient reactions

- Cooled reactor with 5ml reactor coil
- Chilled gas generator

Collection Valve Kit

Automated separation of product/waste output

- Collection valve and cable
- Retort stand and gantry
- Collection tubing kit
- Waste bottle

Organometallic Reagent kit

- 3 long septum piercing aspiration needles (and tubing) for pumping air sensitive reagents
- 3 short septum piercing needles (and tubing) for introducing inert gas blanket to reagent bottles

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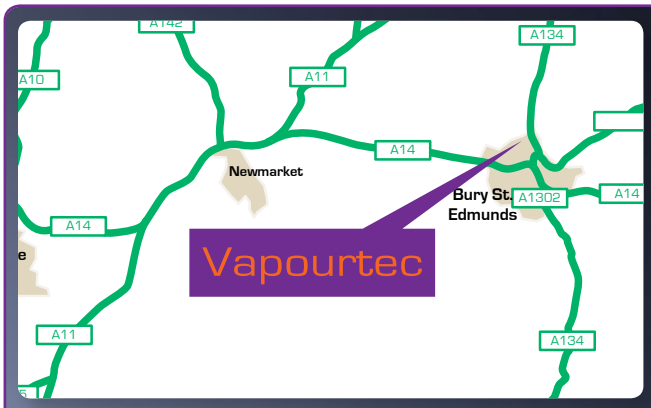
Continuous Innovation

Vapourtec has been at the forefront of lab scale flow chemistry development since 2007 when the R-Series modular system was first launched. Designed and manufactured by Vapourtec in the UK, the modular R-Series has consistently led the market, offering new continuous chemistry capabilities, yet always maintaining backward compatibility so that even the earliest users could still take advantage of the latest developments.

The new E-Series system continues that innovative trend, combining the R-Series forced convection reactor heating system with the robust and easy to use V3 pump design, making simple flow chemistry accessible to a broader range of users, and with a much reduced learning curve.

Vapourtec's continued commitment to sound engineering ensures that reliability and robustness is built in from the start.

This is reflected in the satisfaction of the Vapourtec customer base, many of whom have already returned to place repeat orders.



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