



Parallel Synthesis in Discovery

PolyBLOCK AutoMATE

Building a library of potential candidate lead molecules with the desired characteristics (e.g., biological activity towards a target molecule) requires a targeted parallel synthesis approach, where the ability to run multiple experiments simultaneously dramatically improves productivity.

Similarly, the same approach can be applied for lead optimization – to improve efficacy or other parameters.



PolyBLOCK 8



AutoMATE

Parallel Synthesis

The **PolyBLOCK** and **AutoMATE** platforms are highly versatile automated parallel synthesis platforms. The **PolyBLOCK 4** and the **PolyBLOCK 8** support 4- and 8- independently controlled reactor zones. This compact configuration is designed for situations where bench space is limited. The **AutoMATE** supports 4 independently controlled reactor zones in a linear configuration and is ideally suited for more complex applications. These systems support a wide range of vessel options, from 2 ml vials to 500 ml vessels for the 4-zone versions.*

High Pressure Options

Both platform types use a modular design, enabling capabilities of the system to be easily expanded and adapted. They are also available in high pressure variants with stainless steel and Hastelloy reactor options, supporting the study of hydrogenations and other high-pressure reactions.

*Figures stated here are for standard configurations; please see our **Chemical Synthesis Specification Sheet** for more information on other options available.

Parallel Synthesis in Process Development

PolyBLOCK AutoMATE

Optimize reaction parameters in parallel. Reduce process development time with controlled conditions for meaningful and reproducible results, while recording data for a better understanding of reactions.



PolyBLOCK 4



AutoMATE

Selecting the Best Synthetic Approach

The **PolyBLOCK** and **AutoMATE** platforms enable multiple synthetic routes to be investigated in parallel, identifying the optimal conditions to take through to scale-up. Conversion efficiency, economic viability and potential scale-up challenges can be identified at this stage.

The **PolyBLOCK** and **AutoMATE** platforms offer essential features for early process development in a compact footprint:

- Temperature control from ambient to 200 °C with potential for additional cooling to achieve sub-ambient temperatures
- Option for overhead stirring to mimic manufacturing as early as possible in the development process
- Recording and analysis of data to understand the reactions before scale-up
- Many other add-on options, such as controlled additions (liquid and gas), reactions under pressure and turbidity measurements

Design of Experiment (DoE)

Identifying the critical parameters of a process is crucial for maximizing the output (e.g., yield, purity, selectivity). These parameters can be explored in DoE campaigns using the independent reactor zones of the **PolyBLOCK** and **AutoMATE** platforms.

The **PolyBLOCK 4** and the **PolyBLOCK 8** are compact, parallel synthesis platforms, ideal for limited bench space, supporting 4- and 8- reactor zones, respectively.

The **AutoMATE** is a linear, 4-zone parallel synthesis platform, designed for more complex applications. These systems support a wide range of vessel options, from vials to 500 ml vessels for the 4-zone versions.*

*Figures stated here are for standard configurations; please see our **Chemical Synthesis Specification Sheet** for more information on other options available.



About H.E.L Group

H.E.L Group's mission is to work together with chemistry, safety and biotechnology experts to engineer and unleash the full potential of the scientific community. To this end, H.E.L develops and manufactures innovative scientific instruments and software designed to optimize the efficiency, safety and productivity of key processes in chemistry and biology applications.

The H.E.L team includes highly skilled process and software engineers, based at their extensive research and manufacturing facilities in the UK, as well as sales and support offices around the world.

H.E.L has a long history of solving complex challenges for customers. For more than 30 years the company has worked with businesses and laboratories globally, providing proprietary automated solutions for the pharma, biotechnology, chemical, battery and petrochemical sectors. H.E.L is accredited with ISO 9001 : 2015 and ISO 14001 : 2015.

- With a strong focus on the customer, our **service and support** enables our customers to keep working efficiently
- Our **wide range of customizable products** put the customer at the heart of what we do, with solutions designed around their needs



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