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Focused Microwave Synthesis with CEM Systems



Single-mode cavity design

At the heart of the new Discover System resides the technology which makes it so unique. The patented circular single-mode cavity design directs the microwave energy into a defined area, resulting in a homogenous field pattern surrounding the sample. "Focusing" the microwave energy in this manner enables the system to provide reproducible reaction

conditions, while increasing reaction rates by up to 1,000 times over traditional methods.

The self-tuning cavity design provides instantaneous coupling to all polar and ionic components in the sample. Thanks to Focused Microwave technology, the field pattern is always perfectly tuned for optimal coupling of the microwave energy to the sample. The system continuously delivers microwave energy for unparalleled control of the energy input. True continuous power delivery insures homogeneous energization cycles and permits the identical reproduction of reaction conditions.

The cavity is also designed to accommodate forced gas cooling. Rapid cooling quenches the reaction for cleaner chemistries. The system permits the cooling feature to be engaged during the energization cycle as a tool to promote low temperature microwave-enhanced reactions.

Temperature and pressure feedback control

The Discover System incorporates temperature and pressure feedback systems for complete control of your reaction conditions for Focused Microwave Synthesis.

Use of direct measurement techniques provides the chemist with unparalleled control over the reaction conditions. Reproducing reaction conditions is now easier and quicker than ever before.



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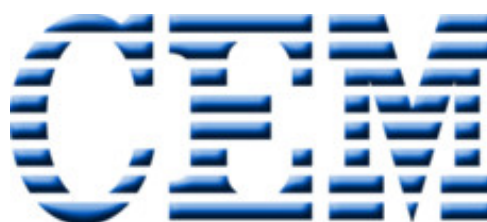
CEM's patented temperature feedback system uses an infrared temperature sensor positioned below the reaction vessel. Therefore, it only needs the very minimum quantity of sample for temperature control. Of course, the sensor is completely isolated from the cavity to prevent damage from reaction spills or tube failures.

Vessel Flexibility

We have all seen it, technology that offers great capabilities, but is too inflexible to be of practical value. At CEM, we know how frustrating it can be to try to work with a device that makes you change your reaction procedures. If a system limits you to certain vessel specifications, it limits your ability to create. Discover can accommodate a variety of vessel sizes and shapes from 1 to 100 mL capacity, as well as a number of condensers and other accessories to facilitate your work. In addition, it accommodates pressure rated reaction tubes allowing reaction conditions up to 25 BAR.

Elevated pressure reactions allow you to take solvents well above their atmospheric boiling points, permitting chemistry at higher temperatures with a given solvent. The advantages here are threefold: 1) higher temperature reactions (for short periods of time) accelerate reaction rates, 2) new pathways are potentially available when the boiling point of a given solvent is elevated above the normal atmospheric working conditions, and 3) lower boiling point solvents are easier to remove from reaction products during work-up.

Contact



More information on this product:

Supplier:
CEM GmbH

Product:
Systems for Focused Microwave Synthesis

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Use this form to request further information about the product **Systems for Focused Microwave Synthesis** directly from the supplier **CEM GmbH** .

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- please send additional information (brochures, PDF documents etc.)
- please submit a quotation
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