



PHOENIX MICROWAVE MUFFLE FURNACE

Need higher temperatures? The Phoenix offers all of the benefits of microwave energy at temperatures up to 1200 °C. Heat samples to extreme temperatures quickly and effectively using this unique microwave system. The Phoenix can be used in applications such as zeolite synthesis or other high temperature applications where pressure is not a requirement.

- Up to 10 times faster than conventional muffle furnaces
- Programmable temperature control
- Clean, cool operation
- Enter and store up to 20 methods
- Auto-start/Auto shutdown software



Microwave-Enhanced Science

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Microwave-Enhanced Science

Systems for **INORGANIC** Microwave Synthesis



MARS

DISCOVER

PHOENIX



CLEANER TRANSFORMATIONS
BETTER YIELDS
FASTER RESULTS!



DISCOVER S-CLASS

RESEARCH MICROWAVE SYNTHESIZER

The award-winning Discover System is in a class by itself and offers unique features and options that can truly be a benefit for inorganic synthesis. The patented single-mode Discover® cavity ensures that your sample receives the optimum amount of microwave power at all times. The rapid energy addition ensures uniform heating (no more thermal gradients across the reaction vessel), more uniform particle distribution, and faster reactions.

- Synthesize nanomaterials
- Functionalize carbon nanorods
- Generate metal nanorods
- Make nanowires
- Synthesize nanocrystals
- Generate nanoparticles and quantum dots
- And much more!

Designed to be dependable, flexible, and simple to use, the Discover Series of microwave synthesis systems offers a range of features, options, and accessories designed to help you do your chemistry, your way.

- Perform reactions up to 300 °C and 300 psi (21 bar)
- Run pressurized reactions in 10-mL or 35-mL glass vials
- Perform open vessel reactions using standard laboratory glassware
- Optional 80-mL pressurized glass vessel for larger volumes
- Optional camera for viewing reactions in situ
- Modules available for flow chemistry and automation



MARS

MICROWAVE REACTION SYSTEM

Perform a single, large scale reaction or multiple reactions in parallel! The MARS™ Microwave Reaction System can apply up to 1600W of microwave power to your reaction dramatically speeding up the reaction progress. The rapid energy addition ensures the synthesis will take place quickly and effectively for each reaction.

The MARS provides the flexibility of working in either a Teflon or glass reaction vessel with temperature and pressure profiles to fit most synthetic needs.

OPEN VESSEL

- Perform atmospheric reactions using standard laboratory glassware and condensers

CLOSED VESSEL

- XP-1500 Vessels offer the highest temperature (up to 300 °C) or pressure (up to 1500 psi) capabilities for pressurized vessels
 - Process up to 12 samples simultaneously
 - Great for the most difficult matrices
 - Available with Teflon®, Pyrex® or quartz liners

Other vessels are available. Contact your CEM Technical Sales Representative to determine the best vessel choice for you.

The MARS has been used in the synthesis of various inorganic compounds, including:

- Metal oxide nanopowders
- Composite materials
- Photocatalysts
- Zeolites
- Nanoporous materials
- Molecular sieves
- Gold nanorods
- And many more!

