



**Discover Prep™**  
Microwave Extraction System

CEM

Discover Prep

Discover Prep

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POWER  
PRESSURE  
ATTEN

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IDLE



Methods



Run



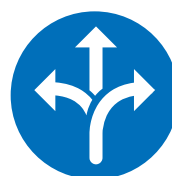
Results

# Rapid Extraction

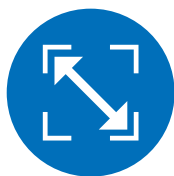
The Discover Prep utilizes microwave technology to extract your desired analyte from a variety of sample matrices. With a 10" touchscreen interface and easy-to-navigate software, you can quickly program a method and achieve rapid, reproducible results in a short time.



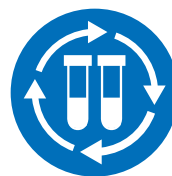
Rapid Results



Run a Variety of Sample Types  
in a Single System



Small Footprint

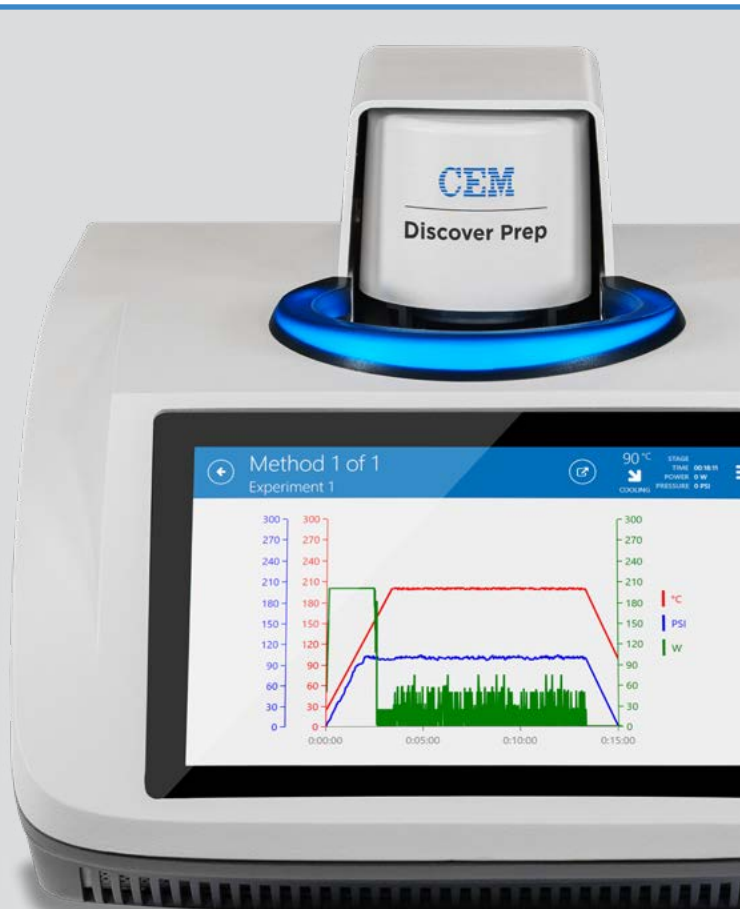


Automate up to 24 Samples

## Microwave Technology

# Efficient and fast extraction.

Rapid heating to the desired extraction temperature, coupled with rapid cooling, ensure a quick and efficient extraction each and every time. Complete control over each individual sample means every extraction is held at the optimal temperature just long enough and then the next sample is processed, maximizing productivity.



## Complete Control

# Maintain required parameters for your extraction.

The Discover Prep's microwave cavity provides a true internal temperature reading and in-situ stirring that allows for efficient microwave extraction. The Discover also has a rapid cooling mechanism, which allows for the safe handling of the sample mere minutes after the extraction.





The Discover Prep can be used for quick and easy extraction of a variety of samples, including but not limited to:



Polymers



Pharmaceuticals



Consumer Products



Nutraceuticals



Cosmetics



Academic Testing

### Flexible

Extract many different sample types with only one instrument.

The Discover Prep can extract many different analyte sets from a variety of sample types, from polymers to nutraceuticals, using the same system.



### Compact

Its small size is a big advantage.

The Discover Prep, including the autosampler is only 14" wide. That's about the width of an analytical balance. Take up minimum bench top space and add efficiency.



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Run



## 1 Load Autosampler

Prepared 35 mL vials containing samples, reagents, and stir bars can be loaded onto the 24-position autosampler, allowing for automated sample handling and throughput.

## 2 Select a Method

Select the desired method, program the number of samples, and press “Play”.

## 3 Microwave Energy is Applied

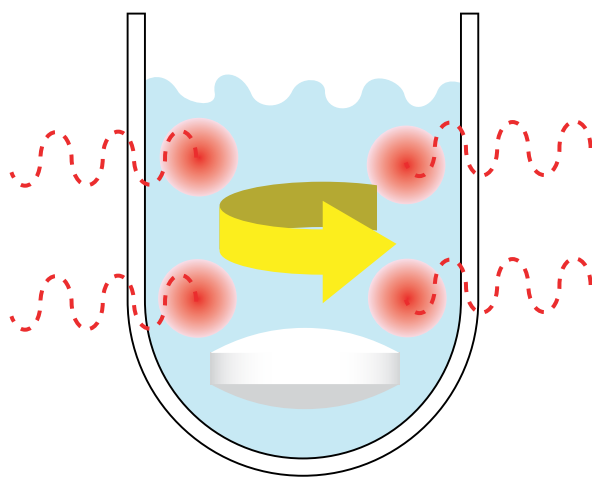
The reaction chamber is pressurized and microwave heating is applied to the vial contents. This results in direct molecular activation and fast and efficient heating. Electromagnetic stirring ensures equal heat distribution and reaction homogeneity.

## 4 iWave® Feature Controls Temperature

iWave technology allows for accurate temperature monitoring of the vial contents, regardless of sample type or solvent volume.

## 5 Compressed Air Cooling

Upon method completion, compressed air cooling is applied, enabling rapid cooling for safe handling and preparation for analysis.





### 35 mL Vials

Pressure-rated 35 mL vials are available to meet your specific sample needs.

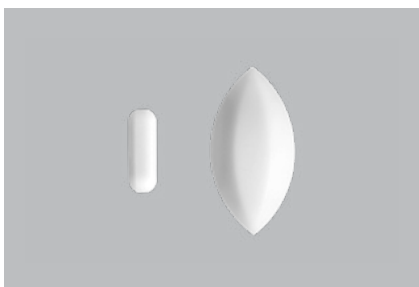
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### 35 mL Vial Caps

Easy to apply and easy to remove, the Teflon® lined vial caps enable self-venting capability of the extraction vial within a safe environment (and without loss of sample).

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### Micro and Egg Shaped Stir Bars

These stir bars are designed for optimal stirring in the 35 mL vial.

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### 35 mL Liners

Either a TFM or PFA liner can be used with the 35 mL vials. This helps with easy cleanup of extracting difficult matrices.



## You get more than an instrument.

When you own a CEM instrument, you have access to a support team of chemists and engineers that are ready to answer any questions, work through ideas, and provide any support you may need. We are here to make sure you succeed.

## Application Notes

Go to **[cem.com/solvent-extraction-applications](https://cem.com/solvent-extraction-applications)** to download solvent extraction application notes.



**Application Note**  
The Extraction of Antioxidants from Food Packaging Film

## The Extraction of Antioxidants from Food Packaging Film

### Abstract

Polymer materials are an integral part of every day life, especially food packaging. Often, antioxidants are added to food packaging materials to help aid in their stability. However, these antioxidants can leach out of the materials into food, demonstrating the importance of being aware of the levels of antioxidants in the polymer materials in food packaging. In this work, Irganox 1076 and Irganox 1010 were extracted from food film provided by a local manufacturer, using three CEM extraction systems, the MARS 6™ microwave system, the Discover Prep™ microwave system, and the EDGE® automated extraction system. The MARS 6 method has been long proven in the industry and is known to deliver accurate results. The results obtained for

### Materials and Methods

#### Reagents

Food film was provided by a local manufacturer. ASTM D6042-96 Calibration Mix was purchased from Restek. ACS-grade 2-propanol and HPLC-grade 2-propanol were purchased from Sigma. 5-mL syringes were purchased from Fisher, and 0.2-micron PTFE Luer lock syringe filters were purchased from Phenomenex. Other materials were provided by CEM.

#### MARS Extraction

A portion of 1 g of food film, cut into 0.5-cm wide squares, was weighed directly into a 110 mL MARSXpress™ Plus vessel,



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