BECAUSE THE FIRST STEP DETERMINES THE LAST

MPS 320™ Microwave Digestion System

JCANO® INGENIERÍA DE MÉXICO
Equipo de Laboratorio, Mantenimiento, Capacitación y CRM personalizado

PerkinElmer®
For the Better

The Science of Great Preparation

In environmental, food, cannabis, and pharmaceutical or manufacturing QA/QC testing, achieving reliable, reproducible results depends on the quality of your sample preparation. You could consider your microwave digestion system to be the first step in any successful trace elemental analysis workflow.

Introducing the MPS 320™ digestion system – an exceptionally reliable, easy-to-use microwave digestion system that accommodates a wide range of sample matrices and applications. It's top-loading, ruggedized and reliable, and safe for anyone in your lab to operate. It gives you a choice of closed-vessel digestion – a requirement for working with volatile compounds – or unique, easy-to-use auto-venting vessels. You can also choose high-performance 8- and 16-position rotors or opt for a high-throughput 32-position setup.

Best of all, it's as hardworking and thrifty as you are: vessels are not considered consumables, they're parts, with warranties, which means a very low cost of ownership for your lab. The MPS 320 system: the perfect microwave for labs of all shapes and sizes. And the foundation of great analysis.

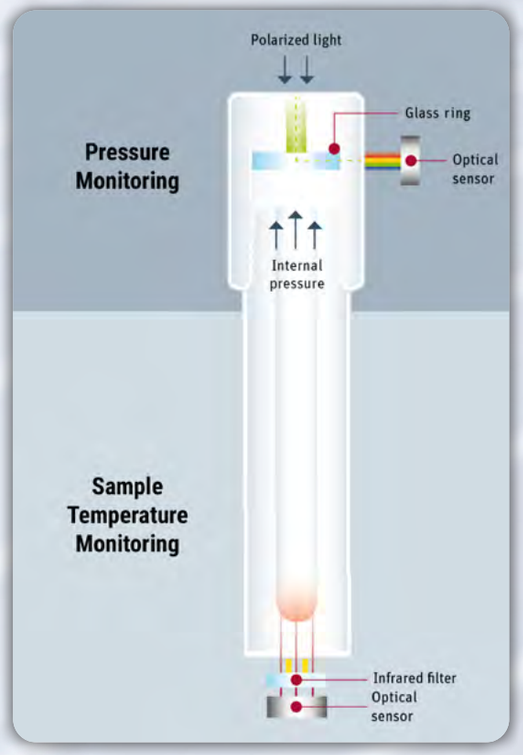
Take Control Over Digestion Results

Analysts need to rely on their microwave to deliver accurate and repeatable results, time after time. That's why our MPS 320 system features ultra-accurate **Direct Temperature Control™ (DTC)** and **Direct Pressure Control™ (DPC)** on each vessel.

DTC is a sophisticated noncontact mid-infrared sensor that provides superb reaction control by measuring the real-time temperature of sample material (not the vessel surface temperature) and regulating microwave power accordingly, while eliminating the contamination and inconvenience of contact-sensing devices.

Our unique, contact-free DPC technology uses polarized light and a glass pressure ring with a remote optical sensor built into the vessel cap to measure and control pressure changes in one or more vessels. If pressure approaches the maximum, the magnetron power switches to pressure-control mode.

What's more, one or multiple DPC caps can be used to give you maximum control and flexibility on any vessel position you want to monitor.



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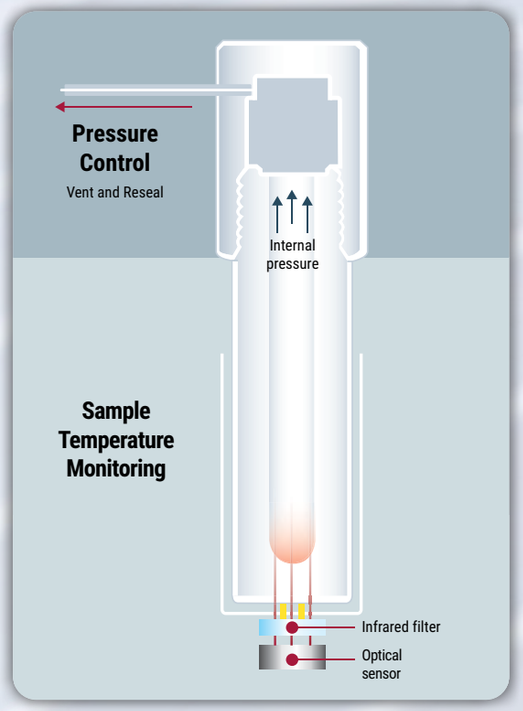
The auto-venting technology in our MR-85 vessels provides controlled venting and resealing when pressure exceeds the preset limit. This unique design allows digestion to continue when preset pressure is reached by maintaining the pressure needed to reach appropriately high temperatures. These MR-85 vessels allow you to safely digest higher initial sample weights as compared to a closed vessel – perfect for organic and other samples that are digested at up to 210 °C.

Auto-venting technology helps eliminate the risk of over-pressurizing the sample, increasing microwave safety. Plus, the unique venting indicator technology alerts you of any venting event, no matter how mild.

The MPS 320 offers two types of venting indicators:

- Through a ready-to-work, calibration-free NOx sensor that triggers a venting signal when the NOx exceeds a preset value
- The unique ability to examine venting tubes on each vessel to determine which vessel vents



Putting Throughput to the Test

Our MPS 320 32-position rotor option delivers a whole new level of microwave throughput. But more vessels is just the beginning of the throughput story.

The system features two continuously controlled 2.45-GHz magnetrons that heat your samples with up to 2,000 W, for even power distribution and enough power to raise the temperature of each vessel up to 260 °C, for shorter digestion and turnaround time.

Typically, cooling takes about half your sample digestion time. So once your sample is digested, an internal (and optional external) cooling fan effectively accelerates the cooldown of the vessel's internal temperature up to 50% by increasing the air flow inside the microwave cavity. This reduces sample prep bottlenecks and dramatically increases your digestion throughput.

Flexibility to Address – and *Digest* – Your Biggest Challenges

The beauty of the MPS 320 system is its flexibility to accommodate your specific lab conditions: You can opt for any of four rotor options, from high-performance 8- and 16-position rotors to our high-throughput 32-position model. And you have a choice of permanently sealed vessels for data integrity when digesting volatile elements or unique auto-venting vessels, for when safety and ease of use are paramount.

MR-85/16- and 32-Position Rotors

MR-50/16-Position Rotor

MR-100/8-Position Rotor

MR-85/16- and 32-Position Rotors

With our state-of-art MR-85 vessel design, we're eliminating the use of expensive consumables – perfect for those labs where lowering operating costs is critical. And these auto-venting vessels are so easy to use, with only three parts to work with, and they're lightweight enough that anyone in the lab can handle 32 vessels at a time, no problem.

The MR-85/32 setup is perfect for high-throughput third-party testing labs where you need fast sample-to-sample turnaround to maximize samples per batch; ease of use for high operational efficiencies and fast learning; and low operating cost to maximize profit per sample. Plus, the MR-85/16 configuration is ideal for municipal environmental, food production, and routine industrial QA/QC labs where ease of use and safe operation are top of mind.

Volume: 85 mL
Max. Working Temperature: High
Max. Working Pressure: Medium

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MR-85/16- and 32-Position Rotors

MR-50/16-Position Rotor

MR-100/8-Position Rotor

MR-50/16-Position Rotor

Made entirely of TFM™ polymer, these MR-50 vessels provide chemical resistance to mineral acids, including hydrofluoric acid, ensuring a high level of mechanical strength, even at high digestion temperatures.

These versatile vessels are designed to handle most application types and throughput needs. And because they're permanently sealed, they guarantee no loss of volatile elements for the utmost in data integrity – a key consideration for the pharma industry. (The <USP 233> method specifically asks for closed-vessel digestion.)

This configuration is also ideal for cannabis testing and other third-party lab applications in which data integrity and reproducibility are critical, and where the ability to handle different applications per rotor is valuable.

Volume: 50 mL
Max. Working Temperature: High
Max. Working Pressure: High

Flexibility to Address – and *Digest* – Your Biggest Challenges

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MR-85/16- and 32-Position Rotors

MR-50/16-Position Rotor

MR-100/8-Position Rotor

MR-100/8-Position Rotor

Designed to handle even the most demanding digestions, these permanently sealed MR-100 vessels boast high-pressure seals and rupture disk design, perfect for applications in which overpressure protection is essential. When fitted with industry-leading DPC cap and DTC mid-infrared sensor technology, your digestions can be performed easily in a controlled environment – perfect for difficult samples such as oils and plastics.

Best of all, our MR-100 vessels give you the flexibility to insert three smaller vessels within a standard vessel in the 8-position rotor, giving you 24 positions total – perfect for small samples in clinical and forensic applications, or for labs that need the flexibility to expand their throughput from time to time.

Volume: 100 mL
Max. Working Temperature: Ultrahigh
Max. Working Pressure: Ultrahigh

Now Everyone in Your Lab Is a Digestion Expert

This is touchscreen ease of use at its best: the MPS 320 digestion system runs on simple, intuitive software preloaded with a cookbook of digestion methods that covers a wide range of sample types. A more comprehensive compendium of methods is also available with hundreds of methods for most any application you require, or you can configure your own favorite methods for optimized – and very easy – operation. What's more, a browser-based remote-control feature allows you to read and export data from anywhere on the network.

Physically, the MPS 320 is easy to maneuver, too: even our 32-rotor configuration is lightweight enough for anyone in your lab to lift and move. And because it's made of high-quality TFM-PTFE materials with minimum porosity, it's simple to clean. Occasional routine maintenance is easy, too, because the system has few moving parts and no sensor connections to break.

Safety Is Built Right In

With the MPS 320 system, it's safety first: after all, its top-loading design makes it safer and easier to load and unload than most other microwaves. And the housing is ruggedized to withstand vessel failure caused by operation error.

Inside, it's all about safety, too. Instead of venting into the microwave cavity, its unique fume-collection system prevents hazardous fumes from coming into contact with operators – and in the event of overpressure, the MR-50 and MR-100 vessels are designed to safely rupture, allowing pressure to release into the central fume-collection manifold and upward through an airtight hose connection. And the MR-85 vessel is designed to auto-vent into the central fume collection system.

After fume collection, acid fumes enter a neutralization unit filled with marble stones that prevents operator exposure to high-concentration acids, keeps dangerous fumes from contaminating your lab or the outside environment, and keeps your exhaust system free from corrosion. The oven also automatically switches off in the event of overheating of the oven itself, the magnetron, or high-voltage supply. Plus, microwave power is regulated by the individual vessel's highest temperature and pressure, so power is optimized.

Innovation by Design

Top-loading design with ruggedized housing for safe digestion

Reliable, accurate DTC and DPC on each vessel

Optional cooling fan for faster cooldown

Powerful 2,000-W dual magnetron for even power distribution

Easy-to-operate 32-position rotor available for fast turnarounds

Wide range of vessel types available (permanently sealed and auto-venting)

Fume-collection system prevents exposure to hazardous fumes and system corrosion

Intuitive software with 21 CFR Part 11 option and preloaded comprehensive method cookbook

Remote control via browser for remote monitoring

We Make Innovation Affordable

It's all about total cost of digestion – and we deliver innovations designed to help you manage costs right from the start and over the long haul.

- Our vessels are super-reliable, with an estimated 10,000 digestions – and offer a unique warranty protection
- Our fume-collection system keeps our components corrosion-free, for a longer system lifetime
- Our MR-85 auto-venting vessels with venting indicator require fewer costly consumables

Focus on Environmental and Food Testing Labs

A high-throughput microwave digestion solution that accommodates a wide range of sample matrices, applications, and operator experience.

Much of our environmental and food testing takes place in contract labs where throughput is paramount and flexibility to confidently – and cost-effectively – deal with multiple sample matrices is key. These labs depend on microwave digestion for elemental testing prep because it contributes to faster and more reliable analysis.

Our MPS 320 system provides the first step in that high-throughput workflow. Its 32-position rotor and MR-85 vessels deliver plenty of capacity for fast, thorough upfront digestion, and its internal and optional external fans provide the quick cooldown you need to keep the samples moving. And its 2,000-W dual magnetron provides even power distribution, with enough power to raise each vessel's temperature to 260 °C, for shorter digestion and turnaround time.

For flexibility, you have four different rotor/vessel combinations, depending on the application. And the system is simple to use, with remote control and simple, intuitive software, so everyone in your lab can be productive right away.

Plus, with its easy-clean surfaces, few moving parts and connections, safe fume-collection setup, and warranties on vessels, this is a system that will deliver great ROI over the long run.

KEEP READING

Focus on Pharmaceutical QA/QC

A 21 CFR Part 11-compliant microwave with exceptional data integrity and reproducibility.

For pharmaceutical labs, quality analysis and control are key to keeping the drug pipeline flowing. And top of mind for these labs are data integrity, reproducibility – and compliance with the myriad strictures and regulations that govern drug manufacturing.

And it all starts with sample preparation. The MPS 320 system delivers the flexibility for pharmaceutical manufacturers to employ it for a variety of digestion applications and gives you control over each digestion. For data integrity, the system's permanently sealed MR-50 and MR-100 vessels guarantee no loss of volatile analytes, while the high-quality TFM-PTFE vessel material is minimally porous, for exceptional reproducibility – and confidence in your results.

What's more, DPC and DTC technologies let you control pressure and temperature in all positions – and our mid-infrared temperature sensor delivers an even greater level of reliable temperature control.

What's more, the system conforms to 21 CFR Part 11 regulations, with compliant software, printable audit results, and easy data-export capability. And installation qualification (IQ) and operational qualification (OQ) support packages are available. Breathe easy: this is compliance you can count on.

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Focus on Industrial Manufacturing QA/QC

A microwave system that offers powerful digestion capability – with safety in mind.

In-house manufacturing QA/QC labs conducting trace-element analyses need a safe, simple, reliable microwave system to digest difficult samples. After all, many of the people performing digestions could be less-experienced technicians, so safety and ease of use are critical.

The MPS 320 system is top-loading and ruggedized to deliver super-safe operation, with a unique fume-collection system that keeps fumes contained. In the event of overpressure, the MR-50 and MR-100 vessels safely rupture and allow pressure to vent into the central fume-collection manifold, while the MR-85 vessels auto-vent into it. And a neutralization unit prevents environmental and operator exposure to high-concentration acids.

Although safe, it still delivers all the throughput you need. Its powerful 2,000-W dual magnetron delivers even power distribution and enough power to raise the temperature of each vessel up to 260 °C, to accommodate even the most heat-demanding applications. And the MR-100 vessels and rotor provide high-temperature and high-pressure capability.

All this power is easy to use, with intuitive software and a cookbook with preloaded comprehensive methods for simple operation.

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Focus on Cannabis Testing Labs

An easy-to-operate, high-throughput solution that accommodates a variety of cannabinoid-based samples, while meeting evolving regulations.

Third-party cannabis labs need to comply with sample preparation as defined by a dizzying array of regional regulations. That's why these labs need microwave digestion that's easy enough for inexperienced lab personnel, with fast turnaround to accommodate high sample volumes – and with the ability to handle various sample matrices. The MPS 320 system does it all.

The system comes preloaded with a cookbook of comprehensive digestion methods that can be geared to cannabis analysis, with software that's intuitive and can be controlled remotely.

Easy to use, yes, but it's built for throughput: Its 32-position rotor with MR-85 vessels enables you to process samples quickly, and the powerful 2,000-W dual magnetron delivers even power distribution and enough power to raise the temperature of each vessel up to 260 °C, for shorter digestion and turnaround time. Plus, internal and external cooling fans enable you to move quickly on to the next batch of samples.

And for flexibility, you have a choice of four rotor-and-vessel combinations for your varying sample types, all of which can digest at least 0.5 g of cannabis samples. This is perfect cannabis digestion, right out of the box.

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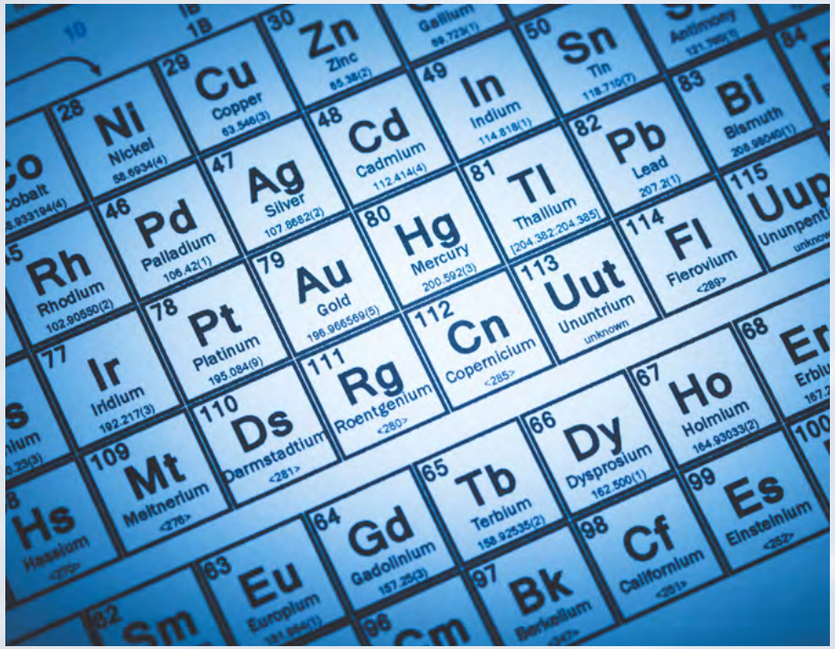
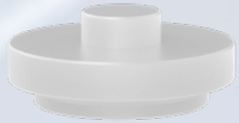
Precision-Engineered Consumables

The consumables for our MPS 320 microwave digestion system are designed with your instrument in mind, with each fit to perform and manufactured with the highest quality materials available. Whether you're looking for rupture discs for permanently sealed vessels or spare auto-venting vessels, we have the consumables you need to keep your MPS 320 instrument up and running smoothly and efficiently.



2500 Run Kits

Rupture Discs



Flat Seals

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Whether you are looking for a basic instrument refresher course, simple troubleshooting techniques, general application support, or method optimization, our field application scientists or service engineers will come directly to your lab. Through education, you will gain knowledge and insights into the latest techniques, not only increasing your confidence, but also unlocking the full potential of your instrument.

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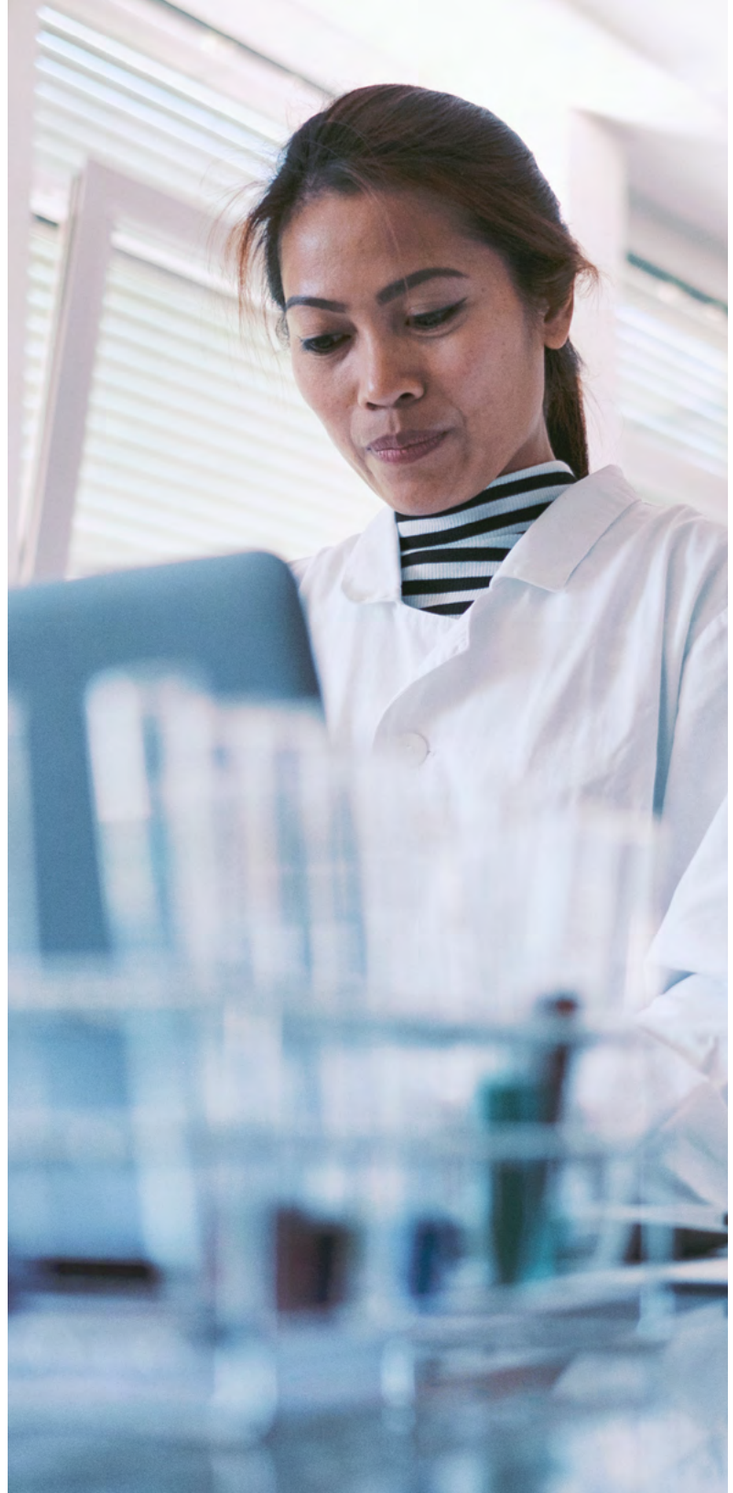

PerkinElmer, Inc.
940 Winter Street
Waltham, MA 02451 USA
P: (800) 762-4000 or
(+1) 203-925-4602
www.perkinelmer.com

JCANO INGENIERIA DE MÉXICO:
Priv. Brunel Mz. 1 Lt. 5 Cs 4-B Fracc. Quinta Versalles C.P. 55767 Tecámac, Edo. De México
Correo: mcano@jcanoingenieria.com
Página Web: https://jcanoingenieria.com Facebook: https://www.facebook.com/JCanoIngenieria
Tel: 55 3996 2586 WhatsApp: 55 7129 9832

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