



Microwave digestion system  
with pressurized digestion cavity



## Multiwave 7000 MICROWAVE DIGESTION AT ITS BEST

Over 35 years ago, Anton Paar developed the first digestion system with a nitrogen pressurized digestion chamber and pressure-sealed vessels – the HPA.

Combining the best parts of the HPA design with modern microwave digestion technology, Multiwave 7000 utilizes pressure-sealed vials and vessels in a Pressurized Digestion Cavity (PDC).

Multiwave 7000 stands for complete digestions of virtually any sample type, a streamlined workflow, lightweight accessories, budget-friendly, easy-to-handle consumables, and minimized cleaning time. There is no need for method development.

“  
We are confident in the high quality of our instruments. That’s why we provide **full warranty for three years.**  
”

Effective January 1, 2020, all new instruments\* will include repair for 3 years.

You avoid unforeseen costs and can always rely on your instrument.

Alongside the warranty we offer a wide range of additional services and maintenance options.

\*Due to the technology they use, some instruments require maintenance according to a maintenance schedule. Complying with the maintenance schedule is a prerequisite for the 3-year warranty.

### Your benefits

#### Maximized sample throughput

Minimize your preparation time with plug-on caps, while the automated closing procedure reduces handling steps. The 2000 W power enables fast heating, temperatures of up to 300 °C ensure short holding times during the digestion run, and the water cooling shortens the cooling process. Combined with a 28-position rack, an unbeatable sample throughput is achieved.

#### Always in touch

Do you find yourself walking back and forth between your desk and an instrument to see whether the process is completed? No time is wasted with Multiwave 7000. Multiwave 7000 sends notifications on completed runs automatically via email, and notifies you via audio and visual signals. You can follow the digestion process from your computer or mobile phone via remote control.

#### Utmost safety

Safety is an important issue, especially when working at elevated temperatures and pressures in combination with concentrated acids and microwaves. Numerous active and passive safety features protect the operator, the system, and the surroundings in all situations. Only Multiwave 7000 comes with ETL and GS ("approved safety") certificates issued from an external testing institute.



#### Service and support directly from the manufacturer

Our comprehensive service provides you with the best individual coverage for your investment. You benefit from:



Maximum uptime



The shortest response time

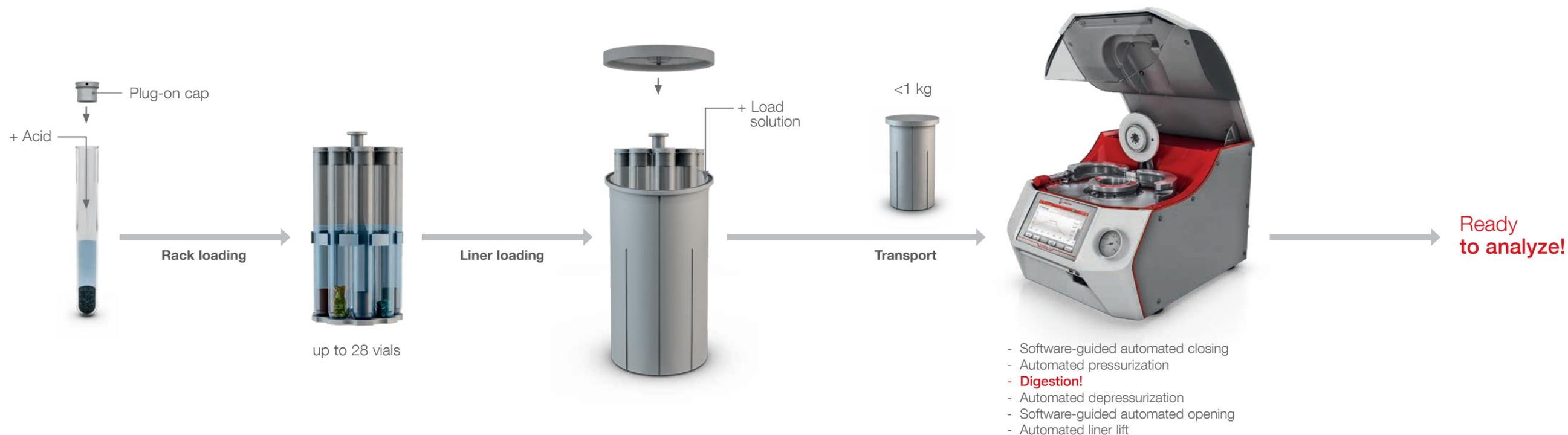


Certified service engineers



A global service network

### Perfect your daily work with a streamlined workflow



# Multiwave 7000 features

## Pressurized Digestion Cavity (PDC) – to digest almost any sample

Inside the PDC, the vials are capped using plug-on caps and pressure-sealed from the automated addition of nitrogen. This enables the use of any type of vial – quartz, PTFE-TFM, and disposables.

## Compactness – to save precious lab space

Multiwave 7000 combines an integrated water cooling system (no need for an external water bath), 2000 W installed power, a built-in touchscreen to avoid the use of an external PC, and a Pt-100 temperature sensor to measure all vial temperatures with a microwave-based PDC. All this contained in a 50 cm x 80 cm x 47 cm (20 in x 31 in x 19 in) footprint.

## SmartLight – to highlight the instrument status

Depending on the instrument's status, the color and mode of the light changes according to whether the experiment is in progress, finished, or in standby.

## Stirring option – to digest even floating samples

In the bottom of the PDC a stirrer can be implemented optionally to facilitate digestion of e.g. floating samples and heavy layer forming samples.



## Uncompromised safety – to protect users and equipment

Redundant safety systems, the window shield, the drip cup, automation, and fault-tolerant software all contribute to make the Multiwave 7000 the safest microwave digestion system of its kind.

## Automation – to release you from tedious tasks

Software-guided automated closing and opening procedures, automated pressurization/depressurization, automated suction of acid fumes, and automated liner lifting facilitate your daily work.

## Liner – for safe sample transport

The PTFE-TFM liner is containing the load solution and represents the housing for the vial rack. It is closed with a drip cup to ensure safe transport of the samples to and from the instrument. Furthermore, it shields the temperature sensor from acids to prevent corrosion.

## Multiple vial types – to fit all samples, acids, and analytes

Plug-on caps are perfect for screw- and tool-free closing of all available vial types: budget-friendly disposables, quartz, and PTFE-TFM vials. For aqua regia digestion as well as Os determination, quartz vessels which are closed with a quartz lid are available.

## Lightweight racks – to carry less than 1 kg

Seven different racks are available for different vial sizes and vial numbers. The same racks fit all vial types. You benefit from less than 1 kg carrying weight for a set of liner, rack, filled vials, and load solution.

# Yes, your sample can be digested with Multiwave 7000

Multiwave 7000 can digest food, environmental, polymer, cosmetic, pharmaceutical, geological, chemical, and petrochemical samples, even in the same run. Different samples with different reaction mixtures can be processed simultaneously in the Pressurized Digestion Cavity (PDC). Sample clustering is no longer necessary. The pressure-sealing suppresses foaming and bubbling during the digestion and thus eliminates cross-contamination.



## You want to run standard methods?

All common standard methods are already implemented in Multiwave 7000, just choose one and start. Heating times of 170 °C in 5.5 minutes according to EPA 3051A are easily achieved using less than 55 % of the installed power. With Multiwave 7000 your samples can be digested according to, among others, the following standards: EPA 3015A, EPA 3051A, EPA 3052, ASTM D4309, ASTM D5258, EN 14385, EN 14902, EN ISO 15587-1, EN ISO 15587-2, USP <232> and <233>, CPSC-CH-E1001-08.2, CPSC-CH-E1002-08.2, CPSC-CH-E1003-09, EN 13805.



## Your samples require high temperatures?

Ceramics, carbon, ores, minerals, alloys, steel, petrochemicals, APIs, and polymers often require high temperatures for complete digestions. Multiwave 7000 provides sufficient room for digesting these samples without being limited by the temperature or pressure limit of the system. Undigested samples belong to the past.



## You want to digest pharmaceuticals?

Any kind of pharmaceutical can be digested according to USP <232/233>, ICH Q3D, and European Pharmacopoeia 5.20 using the same method. Method validation has never been as easy as with Multiwave 7000. The software fulfills the requirements of 21 CFR Part 11 and a comprehensive "Pharma Qualification" documentation is available to ensure qualification of the instrument in one working day. Different raw materials and final product samples like tablets, capsules, powders, and liquids can be digested in the same run.

# Choose your rack according to your application



Applications	All kinds of samples can be digested in every rack. Choose your rack according to whether you want to run with pressure-sealed vials or sealed quartz vessels, and according to the required sample amount, sample volume, or reaction mixture.						
Number of vials	28	24	18	9	6	5	12 (4 x Rack 9 and 8 x Rack 18)
Quartz vial	○	●	●	●	●	●	●
PTFE-TFM vial (HF-resistant)	○	●	●	●	●	●	●
Glass vial (disposable)	●	●	●	●	●	●	●
Rec. filling volume*	4 mL	5 mL	10 mL	25 mL	40 mL	55 mL	4 x 25 mL and 8 x 10 mL
Sample amounts (organic)	up to 0.1 g	up to 0.2 g	up to 1 g	up to 2 g	up to 3 g	up to 4 g	up to 2 g
Sealed quartz vessels	○	○	●	○	●	○	●

● available ○ not available \* Depending on the sample amount the filling volume varies. There is no minimum filling volume.

Specifications	
Temperature	up to 300 °C
Pressure	up to 199 bar
Power	2000 W

## Digestion run of different pharmaceutical samples

In the same run final products, tablets, capsules and liquids, as well as raw materials, sugars, and oils are processed. The pressure peaks correspond to the reaction of the different samples with the acids, finally resulting in clear solutions for subsequent analysis.

