



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.

YOUR BENEFITS

Maximized sample throughput

The use of plug-on caps minimizes the preparation time, automated closing procedures reduce handling steps, 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 24-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.

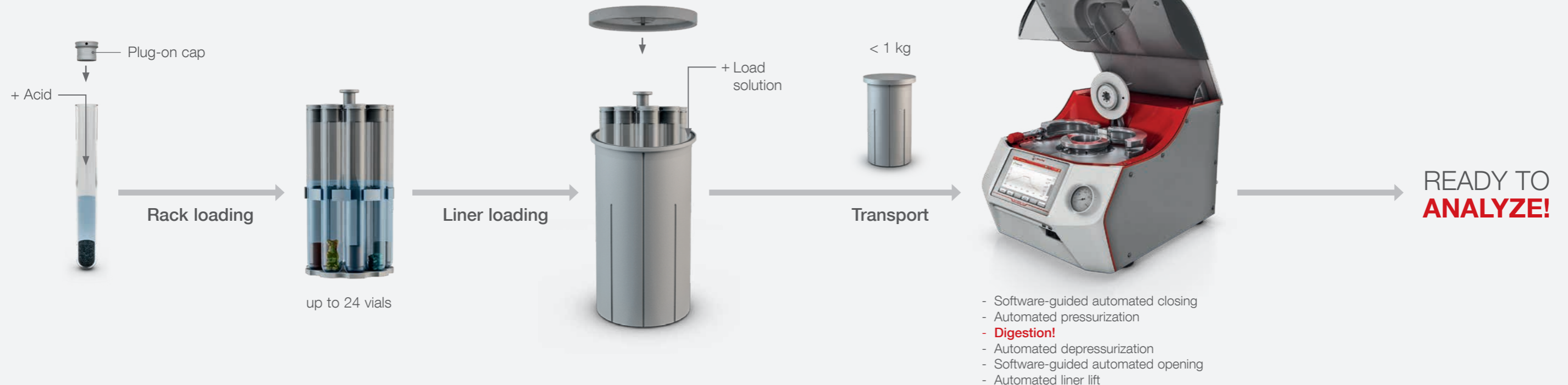
Utmost safety

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.

Full service worldwide

More than 2500 Anton Paar employees work at the headquarters in Graz, Austria, and in more than 26 subsidiaries all over the globe. Together with 60 distribution partners we guarantee you the highest possible product and service quality.

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 external water bath), 2000 W installed power, a built-in touch screen 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 x 80 x 47 cm (20 x 31 x 19 inch) footprint.

Smart Light – 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 holding the load solution and represents the housing for the vial rack. It is closed with a drip cup to assure 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

Five 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>, ICHQ3D, 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.

Multiwave 7000 can be upgraded with different, budget-friendly, racks for any type of application

All kinds of samples can be digested in every rack. Choose your rack depending on whether you want to run pressure-sealed vials or sealed quartz vessels, and according to the required sample throughput, sample amount, sample volume, or reaction mixture.



	Rack 24	Rack 18	Rack 9	Rack 6	Rack 5
Number of vials	24	18	9	6	5
Quartz vial	●	●	●	●	●
PTFE-TFM vial (HF-resistant)	●	●	●	○	●
Glass vial (disposable)	●	●	●	●	●
Recommended filling volume*	5 mL	10 mL	25 mL	40 mL	55 mL
Sample amounts (organic)	up to 0.2 g	up to 1 g	up to 2 g	up to 3 g	up to 4 g
Sealed quartz vessels	○	●	○	●	○

● available ○ not available

* Depending on the sample amount, the filling volume varies. No dedicated minimum filling volume exists.

Specifications

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

Digestion run of different pharma 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.

