

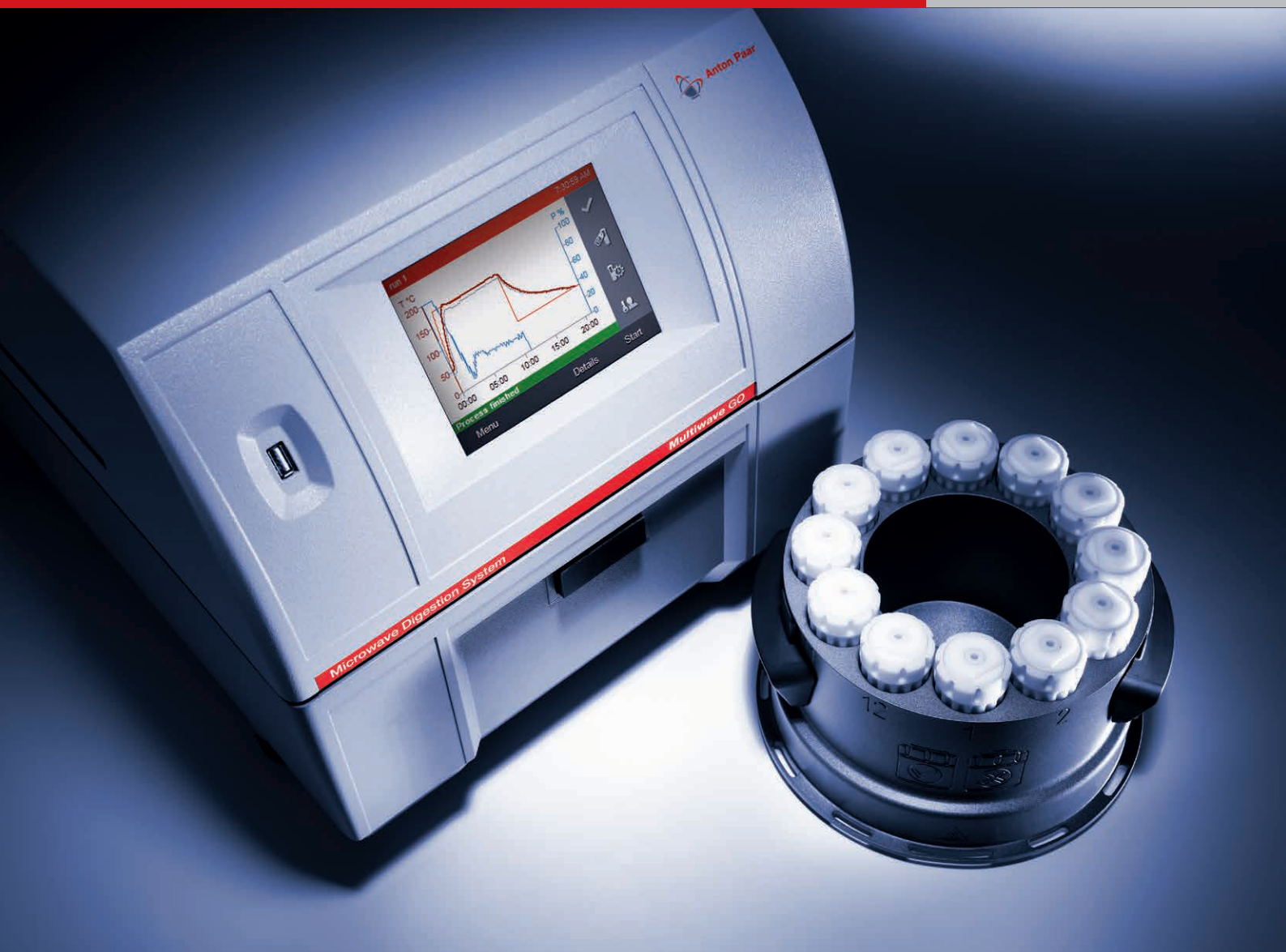


**Anton Paar**

# Multiwave GO

Microwave Digestion System  
with DMC Directed Multimode Cavity

:: Clear Solutions in Sample Preparation



## Ready, Steady ... GO!

For more than 40 years, Anton Paar has been a leading supplier of sample preparation instruments. The latest innovation, Multiwave GO, represents a masterstroke of Anton Paar's engineering. The newly designed and revolutionary Directed Multimode Cavity provides the best of both monomode and multimode microwaves. As in a monomode system, the microwaves are directed to the sample, providing highly efficient heating. As in a multimode system more than one sample can be digested in a single run.

Due to the TURBO cooling process, unique cooling times as short as 8 minutes for a fully loaded twelve-position rotor are possible (for EPA methods). With its SMART VENT technology Multiwave GO is the most convenient microwave digestion system on the market.



## GO for unique features

- ▶ DMC Directed Multimode Cavity for the shortest heating times in a small-footprint system
- ▶ TURBO heating and cooling for the shortest overall process times
- ▶ One-vessel digestion mode for low-throughput applications
- ▶ Extremely lightweight aluminum rotor (5 kg): as an optimized integral part of the DMC Directed Multimode Cavity - no deformation, no corrosion, no loss of stability

## GO for SMART VENT

- ▶ Fast sample preparation by controlled removal of gaseous reaction products
- ▶ Reliable and safe digestion of a wide range of samples
- ▶ High sample amounts of up to 3 g per vessel
- ▶ Differing sample amounts can be reliably digested in one run
- ▶ Samples with different reactivity can be safely digested in one run
- ▶ Easiest handling and maximum flexibility with the new HF-resistant three-part reaction vessels

## GO for intuitive instrument control

No extra space is required for an external controller or PC because of the built-in controller and 5.7" touchscreen. User-friendliness is ensured due to the application library with pre-installed tested standard methods (eg. EPA 3051A, 3052). Flexibility is guaranteed due to the option for method creation.

## GO for years

Anton Paar's 90 years of experience in smart engineering and consistent use of high-quality components means you can rely on Multiwave GO for many years of operation.

## GO for service

With subsidiaries and distribution partners worldwide, you are close to an experienced team providing in-depth application support, training and quick and efficient service.

## GO for budget-friendliness

The attractive purchase price and low costs for operating and consumables make Multiwave GO the perfect investment. Its small footprint minimizes the required laboratory space.



intuitive

economic



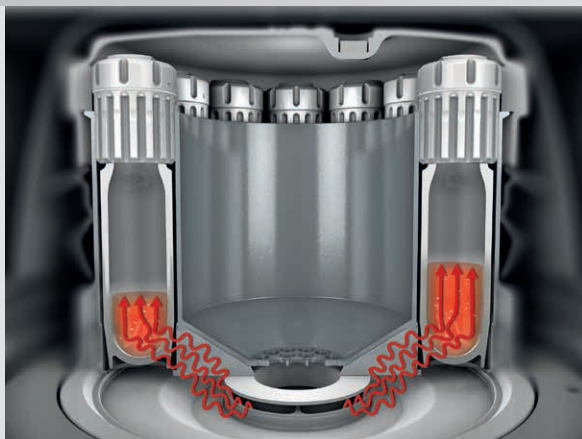
fast



**12 samples in <20 minutes**

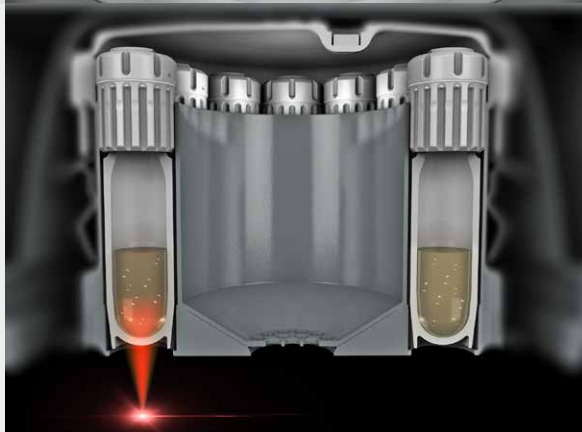
# Multiwave GO: DMC Directed Multimode Cavity for the Fastest Process Times

Behind the scenes of Multiwave GO the unique TURBO heating and TURBO cooling concepts ensure safe operation, high-quality digestion and minimal process times in a small-footprint instrument.



## TURBO heating

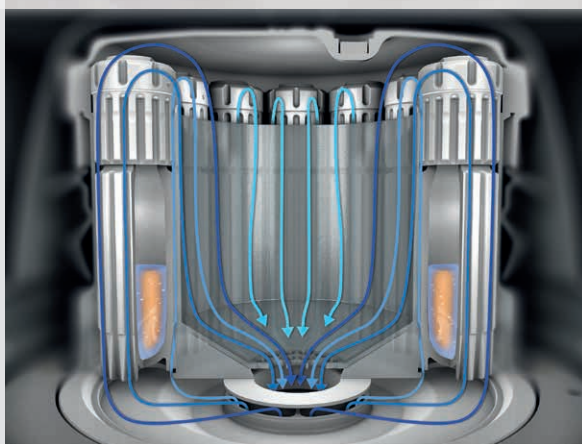
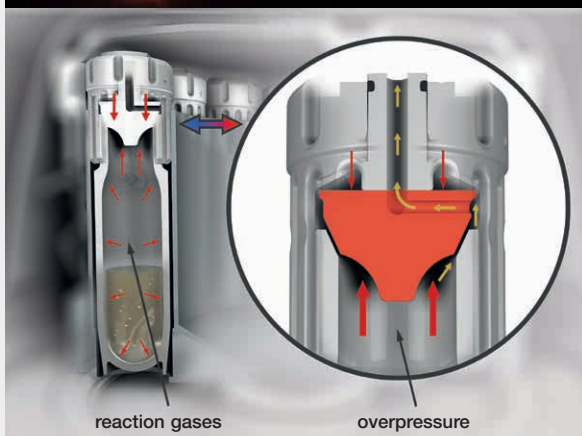
Anton Paar has developed the DMC Directed Multimode Cavity for highly efficient heating with only one magnetron in a compact system. The microwave field adapts itself to the number of filled or empty positions and the filling state of the vessel – that's truly innovative. Temperatures up to 250 °C in routine mode are provided.



## Reaction control

The internal vessel temperature of each vessel is determined and controlled via a contactless IR sensor. SMART VENT technology enables precise pressure control in each vessel. At 20 bar the overpressure is safely released and significantly increased digestion temperatures can be realized.

SMART VENT technology permits extremely high sample weights and the possibility to safely digest samples with different, unknown reaction behavior in the same run.



## TURBO cooling

The built-in cooling unit, exhaust, rotor and vessels (with cooling fins) fit together perfectly and provide the most effective cooling system for rapid cooling from 180 °C to 70 °C in less than 8 minutes (for EPA methods). Continuous low-intensity cooling during a run increases the vessels' lifetime.





### Specifications

Rotor	Rotor 12HVT50	Operating parameters	250 °C @ 20 bar (290 psi)
No. of vessels	1 to 12	Maximum specification	310 °C / 40 bar (580 psi)
Vessels / material	HVT50 / PTFE-TFM	Pressure-activated venting	Yes / 20 bar (290 psi)
Volume	50 mL	Sample amounts	≤3 g per vessel
Filling volume	3 mL to 25 mL	Hydrofluoric acid resistance	Yes



Multiwave GO ...



... goes for  
a huge variety of  
samples.



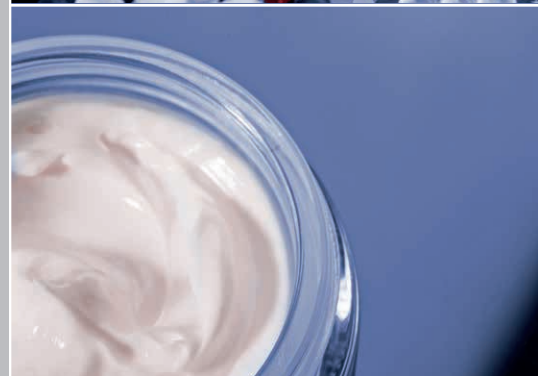
Routine digestion and leaching of high sample amounts, low sample amounts, inorganic or organic matrices.



Everything is possible, a multitude of samples can be simply digested with generic methods.



Material testing  
Petrochemistry  
Plastic and polymers  
Cosmetics  
Metals and alloys  
Geochemistry





## Can I completely digest soil, sediments and fly ash?

Routine acid digestion and leaching of environmental samples is easily performed with Multiwave GO in  $\leq 20$  minutes. The vessels are HF-resistant for a complete digestion of samples containing silicate.

## What are the main fields of application of Multiwave GO?

A huge variety of samples can be reliably digested using Multiwave GO. These include environmental samples, samples for EPA and other standard test methods, food and feed analysis, material testing, petrochemistry, plastics, polymers, cosmetics, metals, alloys and geochemical samples. The innovative SMART VENT technology, which uses the pressure-activated-venting concept of Anton Paar, ensures high digestion temperatures and excellent digestion quality. For extremely demanding applications like ceramics, coke, glass or platinum-group metals, Anton Paar offers Multiwave PRO and HPA-S.

## Can I digest different kinds of food samples in one run?

With SMART VENT, it is possible to release overpressure. The result: reliable and safe digestion of samples with different reaction behaviors at a high temperature.

## Can I run just one vessel?

Multiwave GO has been optimized to run perfectly with one digestion vessel, there is no need for time-consuming "blind vessels".

## I have inhomogeneous samples, can I use Multiwave GO?

For accurate analytical results of inhomogeneous material it is necessary to digest high sample amounts. SMART VENT has been designed for the digestion of sample amounts up to 3 g.

## I am afraid of losing volatile elements, can I still use Multiwave GO?

Multiwave GO provides several generic methods which have been checked thoroughly to prevent loss of volatiles during the digestion process.

## I need high sample throughput - can I use Multiwave GO?

Typically, the digestion takes 20 minutes for 12 samples. Superior vessel handling reduces the preparation times compared to conventional systems. With Multiwave GO the optimized workflow for sample preparation, digestion and measurement allows you to work at full capacity.

## Can I digest according to EPA 3051A and EPA 3052?

Multiwave GO can be used to perform microwave-assisted acid digestion of sediments, sludges and soils according to EPA 3051A or EPA 3052.

