



**MILESTONE**  
HELPING  
CHEMISTS



# DIGESTION: FOCUSED ON WHAT MATTERS



**ultraWAVE** 

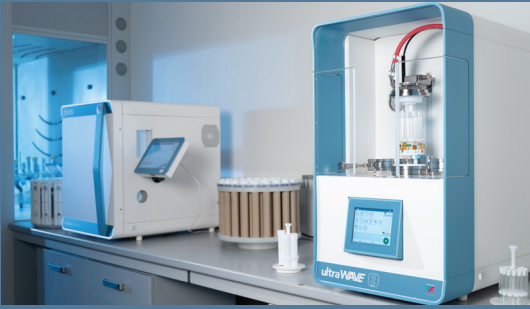
Single Reaction Chamber  
Microwave Digestion System

# SRC PERFORMANCE FOR EVERY LABORATORY

## | A PROVEN TECHNOLOGY, REDEFINED

Microwave closed-vessel digestion has become a cornerstone of sample preparation over the past three decades. As laboratories face a growing variety of samples and tighter limits, Milestone pioneered a better way: Single Reaction Chamber (SRC) technology. First introduced with the ultraCLAVE and later adapted to benchtop systems through successive ultraWAVE models, SRC is now trusted by thousands of laboratories worldwide.

The ultraWAVE 2 eco brings these core advantages to routine and regulated workflows in an accessible, right-sized design. It delivers dependable digestion performance, simplified daily operation, and flexible capacity for food, environmental, pharma, polymers, and more, making Milestone SRC the practical choice for modern laboratories.





**RELIABLE RESULTS** • Uniform conditions

**SIMPLIFIED OPERATION** • Easy handling

**FLEXIBLE DIGESTION CAPACITY** • Racks for any workflow

**FULL CHEMISTRY COMPATIBILITY** • All common acid mixtures

**SUSTAINABLE DESIGN** • Lower acids, lower energy

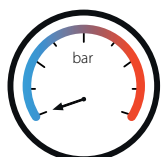
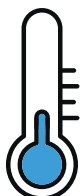
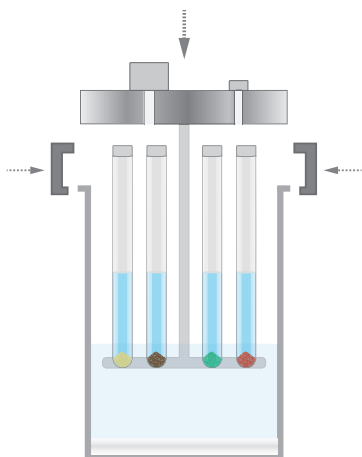
# ONE CHAMBER UNIFORM CONDITIONS RELIABLE RESULTS

## HOW SRC TECHNOLOGY WORKS

At the core of the ultraWAVE 2 eco is Single Reaction Chamber (SRC) technology. Unlike traditional microwave digestion systems, all samples are digested together in one high-pressure PTFE-lined stainless-steel chamber. This ensures that every vial is exposed to identical temperature and pressure, eliminating differences between samples and improving reproducibility. Because the chamber is pre-pressurized with inert gas, the system safely reaches higher temperatures compared to conventional digestion systems. This suppresses boiling, avoids the loss of volatile elements, and prevents cross-contamination. The result is complete digestions, lower acid consumption, and faster turnaround times, for routine, rush and even for reactive samples.

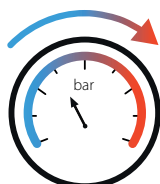
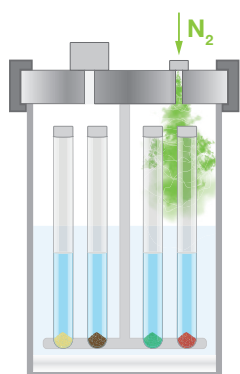
### 1. LOAD

The rack with sample and reagents is placed into the system.



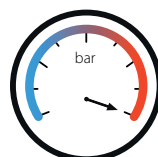
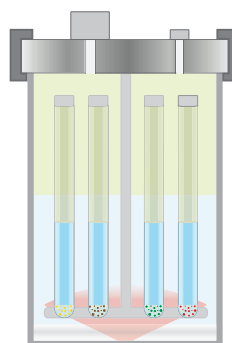
### 2. CLOSE & PRE-PRESSURIZE

The chamber is closed and filled with inert gas.



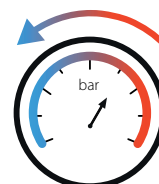
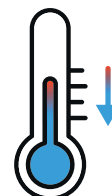
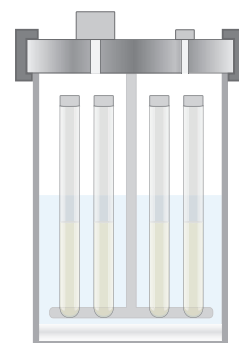
### 3. HEATING & CONTROL

Microwave power drives digestion, with conditions monitored by an internal thermocouple.



### 4. COOLING & VENTING

The integrated air cooling rapidly cools the reactor and then is automatically vented.



## KEY TECHNICAL FEATURES

The UltraWAVE 2 eco combines a proven stainless-steel reactor design with smart engineering to deliver robust performance and simplified operation. With enhanced cooling efficiency, full chemistry compatibility, and an

intuitive terminal, it is built to support both routine and occasional workflows while promoting sustainable laboratory practices.

### FLEXIBLE CAPACITY

Racks from 4 to 26 positions adapt to both sample load and sample type.

### FULL ACID COMPATIBILITY

Handles all common acid mixtures, including  $\text{HNO}_3$ ,  $\text{H}_2\text{O}_2$ ,  $\text{HCl}$ , and  $\text{HF}$ , for a broad range of applications.

### HIGH PERFORMANCE

Robust stainless-steel reactor with PTFE liner and cover ensures durability and reliable digestion in full safety.

### EFFICIENT AIR COOLING

The heat exchanger mounted on the reactor secure fast and efficient cooling.

### INTUITIVE USER INTERFACE

easyCONTROL 3 offers customizable home pages, method libraries, and quick start options for routine applications.



# DESIGNED AROUND YOUR WORKFLOW

## | PRACTICAL BY DESIGN

The ultraWAVE 2 eco adapts to different laboratory needs with a wide range of racks and vials for both low- and high-throughput workflows. Handling is simplified: vials are made of just two parts, and operation is limited to placing or removing the loose-fitting cap, eliminating the cumbersome sealing required by traditional digestion systems. This flexibility makes the system an ideal choice for laboratories working in food, environmental, pharmaceutical, nutraceutical, polymer, petrochemical, and agricultural applications.



## | VIAL OPTIONS

Vials are available in PTFE, quartz, and disposable glass to meet every application requirement from low blanks to full acid compatibility, while offering flexibility across different workflows. A wide selection of racks allows laboratories to meet any digestion requirement, from high-sample-mass protocols to high-throughput runs.

Number of Vial	Vial Material	Vials Volume (ml)
4	Glass (disposable)	70
	Quartz	35
	PTFE/TFM	70
5	Glass (disposable)	40
	Quartz	40
	PTFE/TFM	40
15	Glass (disposable)	15
	Quartz	15
	PTFE/TFM	15
22	Glass (disposable)	10
	Quartz	10
	PTFE/TFM	7

## | ANY SAMPLE, ANY TIME

With SRC technology, every vial is exposed to the same temperature and pressure conditions, ensuring uniform digestions across all sample types. This unique capability allows laboratories to process mixed samples with different chemistries in the same run, without the need to batch similar matrices. By eliminating the risk of incomplete digestion, SRC avoids costly re-processing and guarantees consistent quality of results. Rush samples can also be inserted at any time, optimizing turnaround and productivity.



## | STREAMLINED WORKFLOW

Disposable glass vials remove one of the most time-consuming steps in digestion workflows: cleaning. Instead of spending valuable time washing and reassembling vessels, operators simply use a fresh vial for the next run. Because the ultraWAVE 2 eco maintains elevated temperatures and pressures even with glass vials, laboratories benefit from a level of productivity and safety unmatched by traditional systems. This approach lowers cost per sample, reduces acid consumption, and minimizes waste, supporting both efficiency and sustainability in daily operations.

# GREAT USABILITY BROAD APPLICABILITY

## INTUITIVE OPERATION, EVERY DAY

The ultraWAVE 2 eco is fully controlled through the touch screen terminal with easyCONTROL 3 software. Designed to simplify daily operation, it gives laboratories reliable control and complete documentation of every run. The interface is icon-driven, multilingual, CFR 21 Part 11 compliant, and incorporates Milestone's decades of expertise in microwave sample preparation.

### Customizable home page

Quick access to key methods

### Preloaded libraries

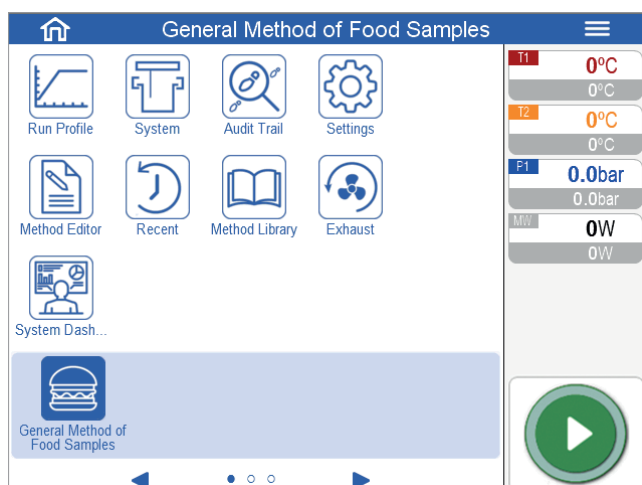
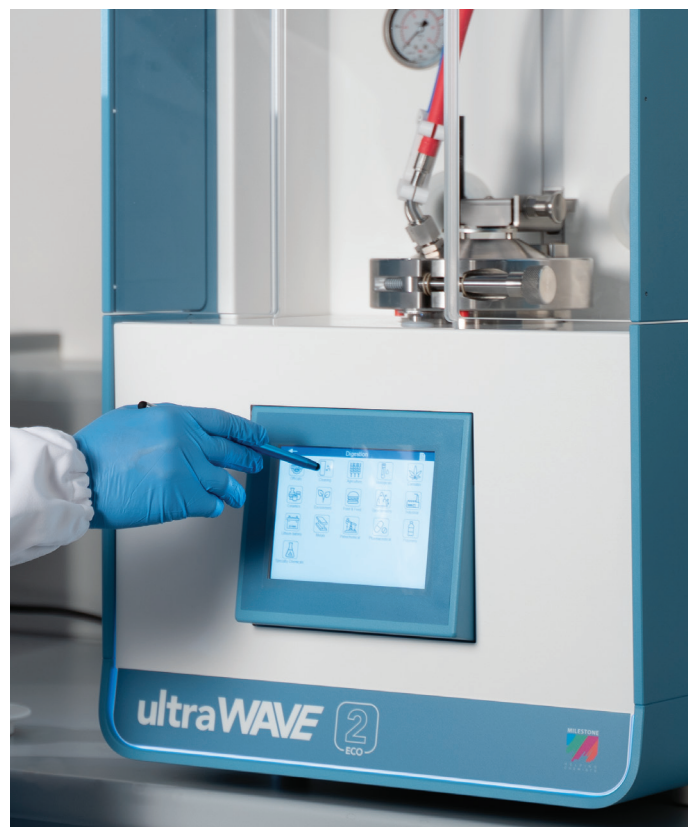
Ready-to-use methods, plus flexibility to create new ones

### Real-time monitoring

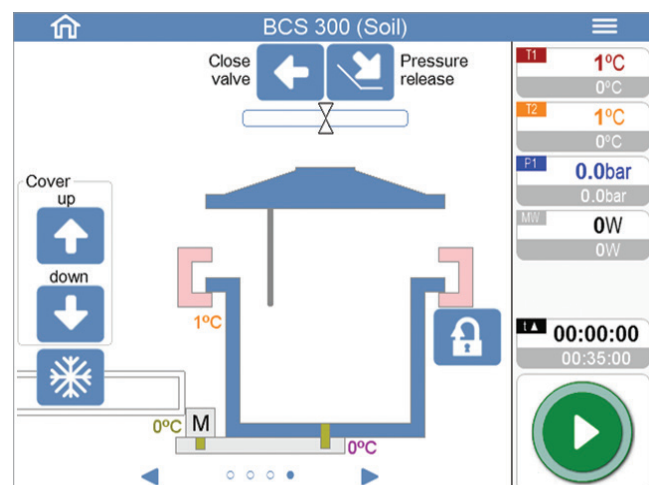
Clear graphs and sample lists track every run

### USB & Ethernet connectivity

Seamless link to external devices and lab networks



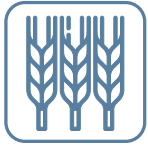
Home page of the easyCONTROL 3 software



All system's parameters under control within one page

## BUILT ON EXPERIENCE, DESIGNED FOR YOUR LAB

SRC technology is already implemented in thousands of laboratories worldwide across diverse applications. The ultraWAVE 2 eco brings Milestone's decades of expertise into a digestion system focused and optimized for the most relevant workflows, securing reliable results in every run. With its broad temperature and pressure range, complete chemical compatibility, and high productivity, the ultraWAVE 2 eco is an asset for contract testing laboratories, in-house company labs, and government facilities alike.



Agriculture



Beverage



Cannabis



Chemicals



Clinical



Cosmetics



Environmental



Food & Feed



Metals



Officials



Petrochemical



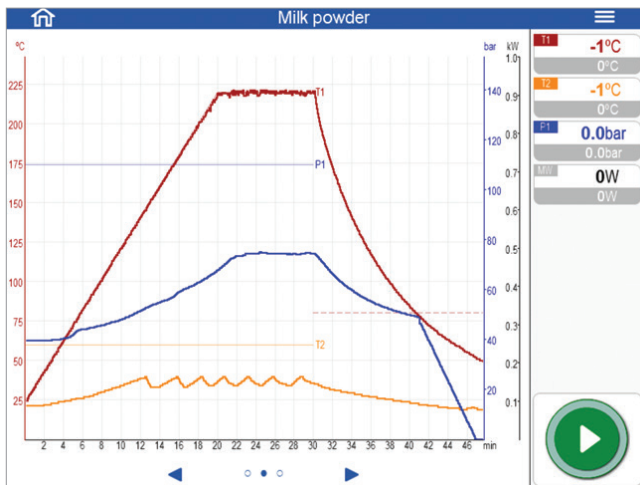
Pharmaceutical



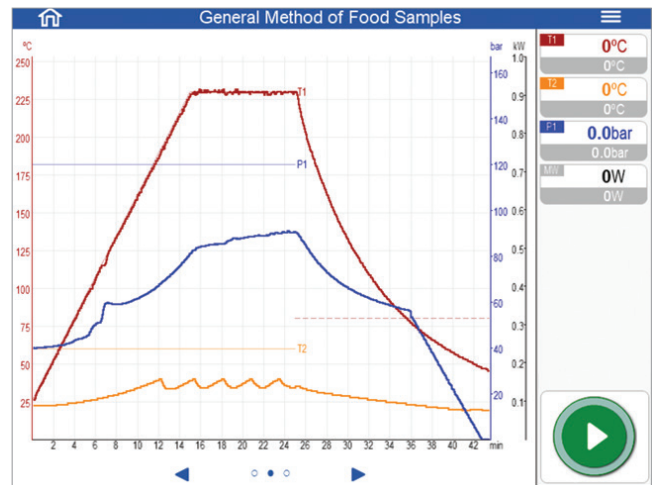
Pigments



Polymers



Digestion of 0,5 g of API with 4 mL of  $\text{HNO}_3$   
in the 15 positions rack



Digestion of 1 g of food (fatty samples) with 8 mL  
of  $\text{HNO}_3$  and 2 mL of  $\text{H}_2\text{O}$  in the 5 positions rack

APPLICATIONS  
ACROSS  
INDUSTRIES

# SMART INVESTMENT SUSTAINABLE CHOICE

## | GREENER BY DESIGN

SRC technology reflects Milestone's commitment to sustainability. By miniaturizing the digestion process, it reduces acid volume, waste generation, and PTFE use in vessel construction, while also offering alternatives with glass and quartz vials. These advances not only cut environmental impact but also enhance digestion capabilities, enabling higher temperature, pressure, and sample mass, along with faster, more efficient heating and cooling. SRC technology helps laboratories.



**MILESTONE**

GREEN<sup>™</sup>  
DIGESTION

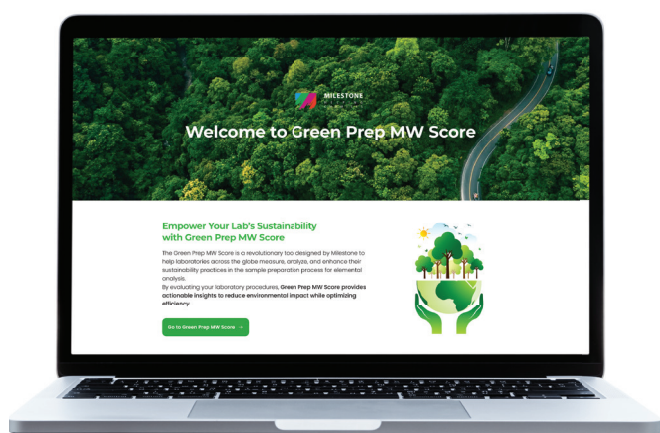
LOWER ACID CONSUMPTION, MINIMIZE WASTE

REDUCE ENERGY USE IN HEATING AND COOLING

DURABLE DESIGN FOR LONGER LIFETIME

## | GREEN PREP MW SCORE

The Green Prep MW Score is a Milestone tool that helps laboratories measure, analyze, and improve the sustainability of their sample preparation workflows. By evaluating procedures step by step, it provides actionable insights to reduce environmental impact while maintaining efficiency.



### **Environmental impact**

Significantly reduce your lab's environmental footprint.



### **Enhanced safety**

Improve laboratory safety with more sustainable handling and disposal practices.



### **Cost reduction**

Save on operational costs through smarter resource management.



### **Optimized processes**

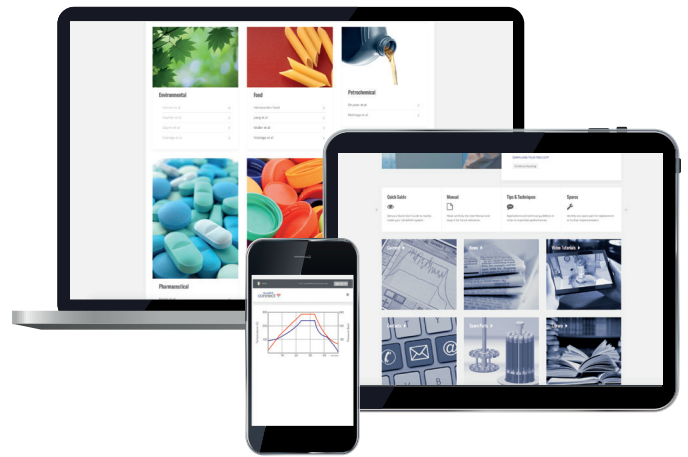
Discover approaches that enhance both effectiveness and sustainability.



Check the sustainability of your method now!  
[milestoneconnect.com/greenprep](https://milestoneconnect.com/greenprep)

## | MILESTONE CONNECT

Included with every ultraWAVE 2 eco, Milestone Connect is a unique web-based platform that extends the system's value. It provides access to a continuously updated library of application notes, technical documents, manuals, part lists, video tutorials, and scientific articles. Connect also enables remote system monitoring from a smartphone, tablet, or PC, and offers 24/7 online support to keep your laboratory connected at all times.



## | LOW COST OF OWNERSHIP

When evaluating a new investment, both operational and maintenance costs play a key role. The ultraWAVE 2 eco introduces a new approach to sample preparation that significantly impacts both areas.

- **Reduced consumables:** simple vials or even disposable glass tubes replace complex and expensive digestion vessels.
- **Lower maintenance costs:** backed by Milestone's 20+ years of SRC expertise and a usage-based preventive maintenance program.
- **Improved productivity:** faster workflows and less operator time lower operating costs while maximizing ROI.
- **Validation package available:** Milestone's Validation Package streamlines compliance with regulatory requirements, reducing the time and costs of qualification.

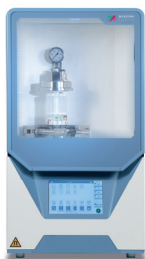


# MILESTONE HELPING CHEMISTS

Established in 1988, Milestone is headquartered in Italy with its R&D and manufacturing centre in Germany and Switzerland and offices in the United States, China, Japan and Korea. We

operate worldwide through a network of over 100 exclusive distributors, all providing our customers with premium application and service support. Milestone's mission is to help chemists by offering them the most advanced instrumentation for sample preparation and direct mercury analysis in the world. Our industry-leading technology, in combination with fast, responsive service and applications support, allows Milestone to support our goal of giving you the highest return on investment possible.

## ADDITIONAL MILESTONE SOLUTIONS FOR ELEMENTAL ANALYSIS



### ultraWAVE 3

Single Reaction Chamber  
Microwave Digestion  
System



### ETHOS™

Microwave Labstation



### duoPUR/subCLEAN

Acid Purification  
System



### traceCLEAN

Acid Steam  
Cleaning System



### easyFILL

Automated  
Dosing Station



### DMA-80 *evo*

Direct  
Mercury Analyzer

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CERTIFIED

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