



**MILESTONE**  
H E L P I N G  
C H E M I S T S



GUIDING YOU TO  
BETTER SAMPLE PREP  
**WITH CONFIDENCE**



**ETHOS™ LEAN**  
Compact Microwave Labstation



# DESIGNED TO BEGIN WITH BUILT TO GROW WITH

## PERFORMANCE AND FLEXIBILITY TO SUPPORT YOUR GROWTH

Sample preparation is the foundation of many analytical workflows, and often the most critical step. In elemental analysis, proper digestion ensures accurate and reproducible results with AAS, ICP, and ICP-MS by enabling complete recovery of target elements, minimizing interferences, and reducing blanks. With over 35 years of innovation and more than 30,000 microwave systems installed worldwide, Milestone is a global leader in microwave sample preparation. The ETHOS LEAN, now in its 2<sup>nd</sup> series, represents this expertise: a compact, affordable labstation delivering full digestion capabilities without compromise. Beyond digestion, ETHOS LEAN supports solvent extraction for chromatography, solvent-free extraction of natural products, and even microwave synthesis workflows, offering unmatched versatility in its class. Selecting the right system is more than a purchase decision: it's choosing a partner. With Milestone, you gain not only proven technology but also the knowledge and support to ensure long-term success.



**COMPLETE DIGESTION CAPABILITY** • Reliable results across a wide range of samples

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**FLEXIBLE ROTOR OPTIONS** • To match any matrix requirement

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**SAFETY BY DESIGN** • Peace of mind on every run

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**COMPACT & COST-EFFECTIVE** • Optimized for space, performance, and budget

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**VERSATILE LABSTATION** • Suitable for multiple sample preparation processes

# PERFORMANCE AND FLEXIBILITY FOR EVERY SAMPLE

## I CONFIDENCE ACROSS EVERY SAMPLE

Digestion vessels are at the core of every microwave system. Their ability to withstand demanding temperature and pressure conditions defines the success of each digestion run. Milestone vessels are engineered from high-purity PTFE-TFM and protected by reinforced safety shields to ensure maximum resistance, durability, and structural integrity. This robust design guarantees reliable performances even with challenging samples. ETHOS LEAN offers a complete range of rotors to adapt to any laboratory workflow:



### **MAXI-14**

Easy-to-handle 14-position rotor with large-volume PTFE vessels. The ideal solution for environmental and organic samples such as soils, wastewater, and beverages.



### **SK-6**

Six high-capacity vessels designed for the toughest applications. Ideal for reactive samples, difficult-to-digest matrices, and large sample sizes, always with confidence and safety.



### **MAXI-14 HP**

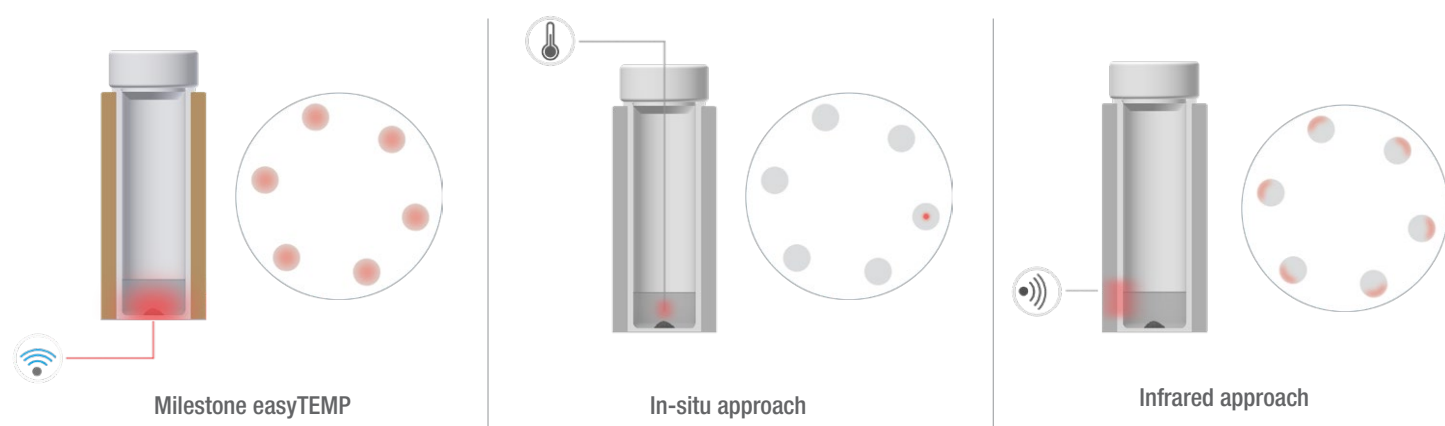
High-performance 14-position rotor built to withstand higher temperatures and pressures, ensuring efficient digestion of demanding samples such as food, nutraceuticals, and pharmaceuticals.

## | SAFETY BUILT INTO EVERY DETAIL

At Milestone, safety is not an option, it is built into every component. ETHOS LEAN combines operational flexibility with uncompromised protection for both users and samples. Its stainless-steel body and door are coated with multiple anti-corrosion layers for long-term durability. A built-in ventilation unit accelerates cooling after digestion and safely directs vapors to the laboratory exhaust system in the rare event of overpressure release. Together, these features provide unmatched peace of mind, allowing laboratories to focus on results with complete confidence.

## CONTACTLESS TEMPERATURE CONTROL

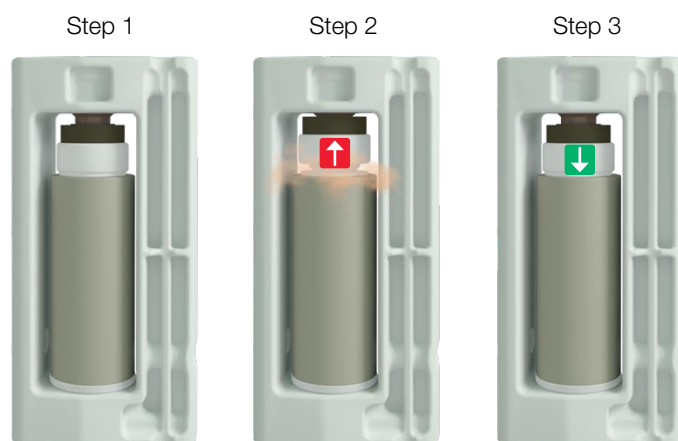
EasyTEMP combines the accuracy and ease of use of in-situ and contactless temperature sensors. It continuously monitors all vessels in real time, ensuring uniform, reproducible, and safe digestions.



*Comparison between temperature sensor technologies*

## VENT-AND-RESEAL TECHNOLOGY

Milestone's patented pressure-release mechanism. During normal operation, it maintains stable digestion pressure (1) it vents in a controlled way (2) and automatically reseals the vessel (3), ensuring continuity of the run.



*Vent-and-reseal technology principle of operation*

# ADVANCED CONTROL EXPERT SUPPORT

## | SMARTER SOFTWARE, EASIER OPERATION

ETHOS LEAN features easyCONTROL 3, Milestone's latest user interface shared across our most advanced platforms. Most runs require only two steps: select a method and press START. All digestion parameters are managed automatically in real time, ensuring safe and reproducible results across all vessels. The intuitive touchscreen combines clean design with powerful functionality, supported by a library of methods that reduces setup time and simplifies method development. For regulated environments, easyCONTROL 3 provides full traceability with secure data management and compliance with CFR 21 Part 11.



## | EXPERTISE AVAILABLE 24/7

When new challenges arise, immediate access to expertise makes the difference. Milestone Connect provides every ETHOS LEAN user with direct access to a comprehensive knowledge base, including scientific papers, methods, application reports, and spare parts references. This is complemented by a growing library of maintenance tips, training modules, and instructional videos, each curated by Milestone application specialists. With Milestone Connect, it's like having an expert by your side, anytime and anywhere.

## | GREENER CHEMISTRY WITHOUT COMPROMISE

At Milestone, sustainability has never been an afterthought. ETHOS LEAN embodies this commitment by reducing acid consumption, minimizing waste, and lowering energy demand, guiding laboratories toward reliable results with a smaller environmental impact. As a practical tool to assess the environmental footprint of the digestion process, Milestone developed the Green Prep MW Score, an innovative metric that helps laboratories move toward greener, safer, and more efficient workflows.

MILESTONE  
**connect**



**Check the sustainability  
of your method now!**

[milestoneconnect.com/greenprep](https://milestoneconnect.com/greenprep)

# BEYOND DIGESTION A TRUE LABSTATION

## | BUILT FOR MORE THAN DIGESTION

ETHOS LEAN goes beyond digestion. As a compact Microwave Labstation, it supports a suite of accessories that expand its capabilities into multiple workflows. Microwave technology provides a faster, cleaner, and more efficient alternative to conventional sample preparation techniques, reducing processing time, simplifying operations, and minimizing reagent consumption.



### **Solvent extraction**

Closed-vessel microwave technology streamlines extraction for chromatographic analysis, dramatically reducing solvent use and cutting analysis times. Ideal for organic pollutant extraction from environmental samples or fat determination in food and feed.



### **Solvent-free extraction**

Patented Milestone technology enables fast and efficient essential oil extraction in just minutes, preserving aroma and natural composition while minimizing degradation. Selective heating promotes a quicker, more efficient release from plant cells.



### **Microwave synthesis**

Microwave synthesis is a safer and faster alternative to heating mantles or complex reactors, enabling rapid optimization of conditions. Its speed supports research projects and allows practical teaching sessions within standard class times.



### **High-temperature processes**

With the ultraFAST accessory, ETHOS LEAN reaches 1200 °C in just minutes, transforming into a microwave furnace for demanding high-temperature applications such as inorganic synthesis, fusion, or fire assay.

# 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



### ETHOS™

Microwave Labstation



### ultraWAVE 2 eco

Single Reaction Chamber  
Microwave Digestion  
System



### DMA-80 evo

Direct  
Mercury Analyzer



### duoPUR/subCLEAN

Acid Purification  
System



### traceCLEAN

Acid Steam  
Cleaning System



### easyFILL

Automated  
Dosing Station

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## MILESTONE



HELPING  
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