



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



THE SIMPLE PATH TO  
**HIGH QUALITY**  
IN METALS ANALYSIS



**ETHOS EASY**  
Advanced  
Microwave Digestion System



ULTIMATE EASE OF USE  
AND CONTROL



UNRIVALED PERFORMANCE  
AND THROUGHPUT



EXPERTISE  
AND KNOW-HOW



SUPERIOR SAFETY  
AND RELIABILITY



FLEXIBILITY

# THE FIRST STEP TO CONFIDENT RESULTS

It is a common misconception that all laboratory microwave systems are alike; at Milestone we know this is not true. Sample preparation is one of the most impactful steps in trace metals determination. The quality of analytical data obtained by ICP/ICP-MS is directly reliant on digestion quality. Today, microwave technology in sample preparation has been established in a variety of industries: Environmental, Food, Pharmaceutical, Agriculture, Consumer Product Testing, Specialty Chemicals, Geological, Mining, and many others. Milestone's sample preparation solutions maximize the AA/ ICP/ ICP-MS/ performance, and a lab's overall analytical capability.

## FOCUS ON WHAT MATTERS: YOUR APPLICATION

Choosing the right system and configuration is a key step in maximizing investment and expanding your lab's capabilities. Some of the most crucial parameters that should be considered when choosing a microwave digestion system include the following:

SAMPLE TYPE

LAB THROUGHPUT

SIMPLICITY AND EASE OF USE

RELIABILITY

FLEXIBILITY

## SAFETY AND RELIABILITY IN SAMPLE PREPARATION

The ETHOS EASY fully embodies Milestone's philosophy and knowledge of, microwave sample preparation. Specifically designed for closed vessel acid digestion, it offers a perfect integration of microwave hardware, user interface, reaction sensor technology and pressure resistant vessels. The ETHOS EASY is the most powerful system in the market, with two magnetrons and a total power of 1900 Watts. Microwave homogeneity is assured through a dedicated microwave diffuser. Safety and reliability are Milestone's priorities. Both factors are ever present in the foundation of the ETHOS EASY's design. The cavity has a volume in excess of 70L, and is constructed entirely of stainless steel to ensure longevity and structural integrity. Our unique pressure responsive door, also made of stainless steel, ensures high safety even with the most reactive samples.



## SMART SOFTWARE TO SAVE YOUR TIME

hundreds preloaded methods or create a new one yourself using our intuitive software. Once you press 'START' the system will automatically follow the user defined temperature profile using a sophisticated PID algorithm. The preloaded applications, including all US EPA methods, virtually eliminate any need for method development. Each preloaded method includes a temperature profile, sample size and choice of reagents. To further simplify the workflow in the lab the ETHOS EASY is equipped with a backlit logo that indicates the digestion progress, showing to the operator the status of the digestion process, such as heating, cooling, sample ready and error messages.

The ETHOS EASY comes with a dedicated touch screen terminal with easyCONTROL software which incorporates our expertise and knowledge in microwave sample preparation. The ETHOS EASY controller is user-friendly, icon-driven and multi-language. To find the method which best suits your application, simply select one of the

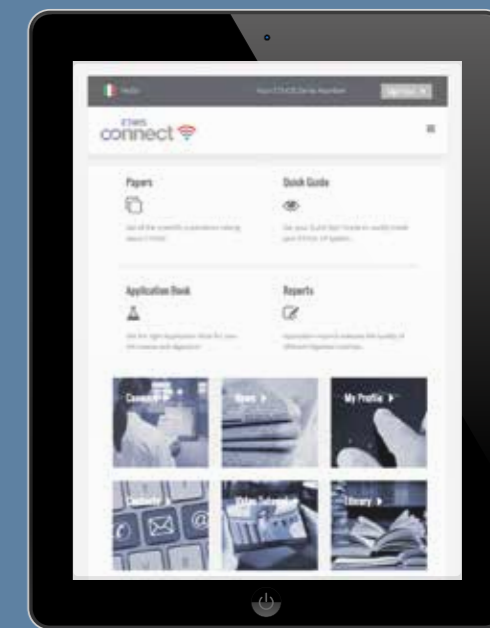
# EASE OF USE WITH UNPARALLELED DIGESTION CONTROL

In a digestion process the temperature controls the sample decomposition and directly affects digestion quality. Milestone pioneered the use of infrared sensors combined with an in-situ temperature sensor to more accurately control the digestion process. Today, Milestone innovates again by combining all the benefits of in-situ and infrared sensors into a single solution: **the Milestone easyTEMP, a direct contactless temperature sensor.**

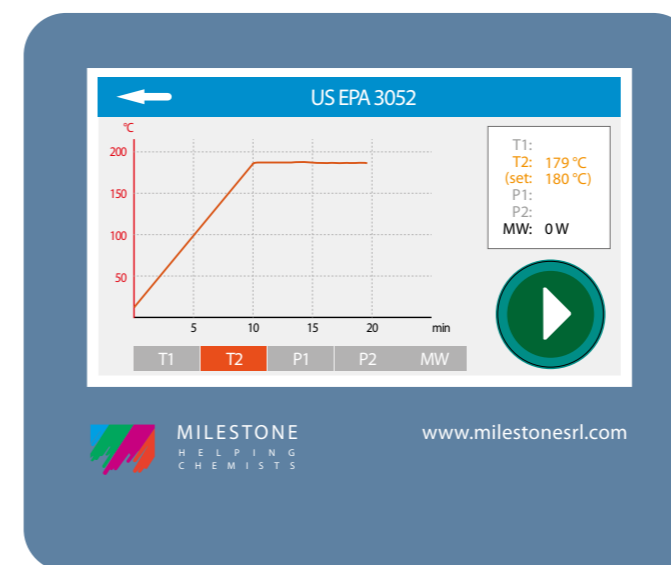
The easyTEMP contactless sensor directly controls the temperature of all samples and solutions, providing accurate temperature feedback to ensure complete digestion in all vessels with superior safety. This technology combines the fast and accurate reading of an in-situ temperature sensor with the flexibility of an infrared sensor. The temperature profile of the digestion process is displayed in real-time on the ETHOS EASY terminal.

# MILESTONE CONNECT 30 YEARS OF EXPERIENCE AT YOUR FINGERTIPS

Included with the ETHOS EASY is a unique web-based application: Milestone Connect. This app allows you to become a part of the Milestone community and gain exclusive access to a robust library of information: lists of parts, technical notes, user manuals, video tutorials, continuously updated application notes and all relevant scientific articles. With Milestone Connect you have instant access to information 24/7.



	MILESTONE easyTEMP	IN-SITU APPROACH	INFRARED APPROACH
EASE OF USE	★★★★★	★★★★☆	★★★★★
DIRECT CONTROL	★★★★★	★★★★★	★★★★☆
PRECISION AND ACCURACY	★★★★★	★★★★★	★★★★☆
CONTROL IN ALL VESSELS	★★★★★	★★★☆☆	★★★★★
SAFETY	★★★★★	★★★★☆	★★★★★
RUN ANY NUMBER OF VESSELS	★★★★★	★★★★★	★★★☆☆



Temperature profile of a soil digestion in accordance with US EPA 3051 using the MAXI-44 rotor

The easyTEMP direct contactless temperature sensor provides:

- INCREASED EASE OF USE AND PRODUCTIVITY
- ENHANCED CONTROL IN ALL VESSELS
- FAST AND ACCURATE TEMPERATURE MEASUREMENTS FOR ALL SAMPLES
- SUPERIOR DIGESTION QUALITY
- LOWER RUNNING COSTS

# FLEXIBILITY AND PERFORMANCE THAT MAKE THE DIFFERENCE

## | SK-15 ROTOR

Regardless of the samples you're trying to digest, the SK-15 High-pressure rotor is always an effective option to simplify your journey from sample to analysis, even with hard-to-digest samples, reactive samples or large sample masses. The SK-15 is a high-pressure and high-temperature rotor with a capacity of up to 15 PTFE-TFM vessels of 100 mL.

---

UNMATCHABLE VERSATILITY

---

LARGE SAMPLE MASS

---

HIGH PERFORMANCE

---

## | MAXI-44 ROTOR

Many laboratories routinely process high number of samples, such as soils, sediments and aqueous samples. The MAXI-44, featuring up to 44 PTFE-TFM vessels of 100 ml, perfectly matches these requirements, providing high productivity, reliability and superior ease of use. The MAXI-44 finds its natural fit in all laboratories requiring to process large samples batches.

---

DIGEST LARGE BATCHES

---

EASY HANDLING

---

HIGH PRODUCTIVITY

---

Rotors and pressure vessels are crucial components to ensure high digestion quality and safety. Milestone's rotors are built with high-purity PTFE-TFM, PEEK safety shields and a unique safety release mechanism.



## | VENT-AND-RESEAL TECHNOLOGY

The vent-and-reseal technology ensure high quality digestion and full safety. The safety spring built into the cover allows for precise venting of the vessel, if that should occur. Once the pressure has been reduced to a containable level, the cover closes again. Only the excess pressure, mainly generated by CO<sub>2</sub>, NO<sub>x</sub> fumes, is therefore released, allowing for a complete recovery of even volatile elements.



## | MUCH MORE THAN A DIGESTION SYSTEM

The ETHOS EASY embraces Milestone's philosophy of "microwave labstation". The ETHOS EASY enable several applications beyond microwave digestion:

**Microwave evaporation**  
for acid and solvent

**Insert and micro-inserts**  
for trace and ultra-trace element analysis

**Microwave Extraction Systems**  
for environmental, food and natural products

**Microwave Muffle Furnace**  
for fast ash determination



*fastEX-24*  
Extraction rotor for  
environmental sample



*MMR-15*  
Evaporation/  
Concentration rotor

# SUPERIOR POWER AND PERFORMANCE FOR HIGH-VOLUME LABORATORIES



## | MAXI-24 HP ROTOR

The MAXI-24 High Performance (HP) and high throughput rotor was designed with double pressure limits and greater capacity than other high throughput rotors. It process increased volumes of sample and a wide variety of matrices within a single rotor-based platform. The MAXI-24 HP, along with the built-in easyTEMP, contactless temperature control in all vessels, automatically controls the temperature even in case of exothermic reactions. Quick-assembly vessels are closed with a simple hand-tightening, improving your daily productivity.

---

HIGHER THROUGHPUT

---

GREATER CAPACITY

---

HIGHER PRESSURES

---

EASY HANDLING

---

MORE PROFITABLE RUNS

---

# MILESTONE HELPING CHEMISTS

Established in 1988, Milestone is headquartered in Italy and has offices in Germany, Switzerland, the United States, China, Japan and Korea. We operate worldwide through a network of over 100 exclusive distributors, all providing our customers 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 providing you the highest return on investment possible.

## ADDITIONAL MILESTONE SOLUTIONS FOR ELEMENTAL ANALYSIS



### ultraWAVE

The Game Changer in  
Microwave Digestion



### duoPUR/subCLEAN

Acid Purification  
System



### traceCLEAN

Acid Steam  
Cleaning System



### DMA-80 *evo*

Direct Mercury Analyzer

WWW.MILESTONESRL.COM

**MILESTONE**



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

UNI EN ISO 9001:2008  
CERTIFIED

MILESTONE Srl - Via Fatebenefratelli, 1/5 - 24010 Sorisole (BG) - Italy  
Tel: +39 035 573857 - Fax: +39 035 575498  
www.milestone srl - email: analytical@milestone srl

MILESTONE INC. - 25 Controls Drive - Shelton, CT 06484 - USA  
Tel: (203) 925-4240 - Toll-free: (866) 995-5100 - Fax: (203) 925-4241  
www.milestone sci - email: mwave@milestone sci

MILESTONE GENERAL K.K. - KSP, 3-2-1, Sakado - Takatsu-Ku,  
Kawasaki 213-0012 - Japan - Tel: +81 (0)44 850 3811 - Fax: +81 (0)44 819 3036  
www.milestone-general.com - email: info@milestone-general.com

MLS GmbH - Auenweg 37 D-88299 Leutkirch im Allgau - Germany  
Tel: +49 (0)7561 9818-0 - Fax: +49 (0)7561 9818-12  
www.mls-mikrowellen.de - email: mws@mls-mikrowellen.de