

## Milestone Ethos LEAN Microwave Digestion System

Introducing the NEW Milestone Ethos Lean Microwave digestion system for laboratories that NEED microwave digestion sample preparation but have limited budgets.

### Ideal Industries:

- Agriculture
- Cannabis
- Environmental
- Food
- Pharmaceutical
- Official

Click on the image below to have a look at the Overview Video.



## Introducing the New Milestone Ethos LEAN – Microwave Digestion

### Compact Microwave Digestion

The ETHOS LEAN collects Milestone experience and embraces all these values into a compact and economical solutions for sample preparation, matching the requirements of laboratories that approach microwave digestion without the needs of high-volume labs

The easyTEMP technology controls the digestion temperature in all vessels, while the easyCONTROL software provides a large methods library to handle your samples, eliminating the tedious method development. The software, fully compliant with CFR 21 part 11, includes the most advanced features to simplify the control of the digestion process.



Magna Analytical

### This Issue

Ethos LEAN Microwave Digestion **P.1**

Ethos UP – Advance Digestion **P.2**

MembraPure Water Purification **P.3**

### Your Trusted Partner In Sample Preparation for Metals Analysis

The ETHOS LEAN was specifically designed to provide high-quality closed-vessel acid digestion for labs with limited throughput needs. Whether you're setting up a new lab, or improving your elemental analysis, a compact and economical solution for sample preparation is crucial. ETHOS LEAN matches the requirements of laboratories that approach microwave digestion without the needs of high-volume labs.

- **Reliable and durable hardware** with stainless steel cavity & corrosion-resistant coating
- **Compact and economical** taking almost half of the conventional microwave footprint.
- **User-friendly interface** with hundreds built-in methods
- **Easy and fast handling** with unique vessel design construction.
- **Advanced reaction control** for high digestion quality.

## Microwave Ashing

### Fast ashing in minutes instead of hours!

Determination of the ash content, whether for process control or as a preparation method for other analytical techniques, is an important test performed daily in thousands of laboratories worldwide. While ashing is a relatively simple process, conventional muffle furnaces are often inefficient, leading to tedious and time-consuming procedures. The advent of microwave ashing furnace for dry applications has represented a breakthrough in the process and quality control of samples like polymers, petroleum, food and feeds, pulp paper and pharmaceuticals. Unique design of PYRO microwave furnace eliminates equipment corrosion and acid fume pollution, greatly reducing analyst exposure to acid fumes. PYRO microwave diffuser ensures usage of all available crucibles including metal, porcelain and quartz fiber. In particular, the unique Milestone UltraFAST quartz fiber crucibles further accelerate the ashing process.

- Enhanced performance. Advanced microwave heating in just 8 minutes instead of hours!
- Three interchangeable configurations. Choose your preferred set-up and crucible types
- Operator's safety. No exposure to heat and fumes
- Standard method compliance. ASTM, USP, SEMI and ISO compliance
- Rugged and durable construction. Standard 1 year warranty!



## Milestone Pyro Microwave Ashing with UltraFast Heating

### High Sample Throughput

The PYRO with High-Throughput Setup accommodates up to 24 Milestone quartz fiber crucibles. A unique, rugged, solid, microwave-transparent, ceramic muffle allows microwave radiation to pass through and rapidly raise the temperature of a silicon carbide plate. Sample crucibles are placed on a large clean quartz plate and an airflow is induced by a built-in exhaust system. A porous ceramic honeycomb frit built into the wall of the muffle furnace allows a constant stream of air to pass over the sample crucibles. The combination of microwave "superheating" and induced airflow results in a dramatic reduction of the ashing time. Furthermore, a large quartz tube located above the muffle conveys gases and vapors generated by the ashing process to the exhaust pipe.

Any type of crucible (metal, porcelain, quartz, etc.) can be used.



### UltraFAST Heating

As the name implies, the PYRO with UltraFAST Setup has an extremely fast heating rate. A typical ashing temperature of 800°C can be reached in just 5 minutes, starting from room temperature! This eliminates the need of running the system overnight, and avoids the lengthy heat up time associated with electrical resistance furnaces, dramatically lowering the power consumption and cost.

A circular heating element assures a perfect temperature uniformity throughout the cavity, largely exceeding requirements of ASTM, USP, SEMI and ISO standard methods. Temperature is monitored and controlled via a contactless infrared sensor. Up to 5 crucibles are located on a ceramic tray, which can be easily removed from the muffle at the completion of the microwave run. The incredibly fast heating rate of this PYRO setup, combined with the properties of the Milestone UltraFAST crucibles, makes this configuration the best choice for all high-temperature applications requiring no heating/cooling inertia.

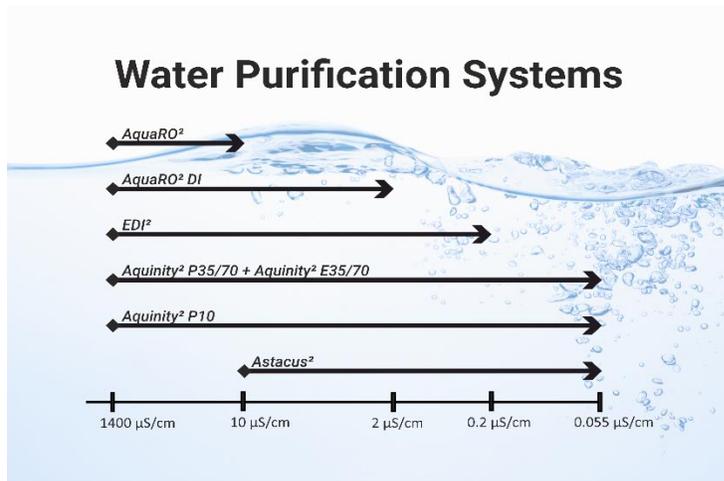


### Self-closing Quartz Crucibles

The self-closing quartz crucibles and dedicated rack ensures fast Carbon Black Determination In Olefin Plastic and high reproducibility compared with the reference method ASTM D1603, thus avoiding the use of nitrogen. The vacuum generated during the release of combustion fumes ensures perfect sealing and an inert atmosphere the quartz crucibles, allowing for complete determination of the carbon black. The self-closing quartz crucibles and microwave heating allow for carbon black determination in only a few minutes, obtaining superior data reliability and reproducibility.

- Shorter ashing time
- Fast heating and cooling
- High chemical and thermal stability
- Constant weight
- Long lifetime



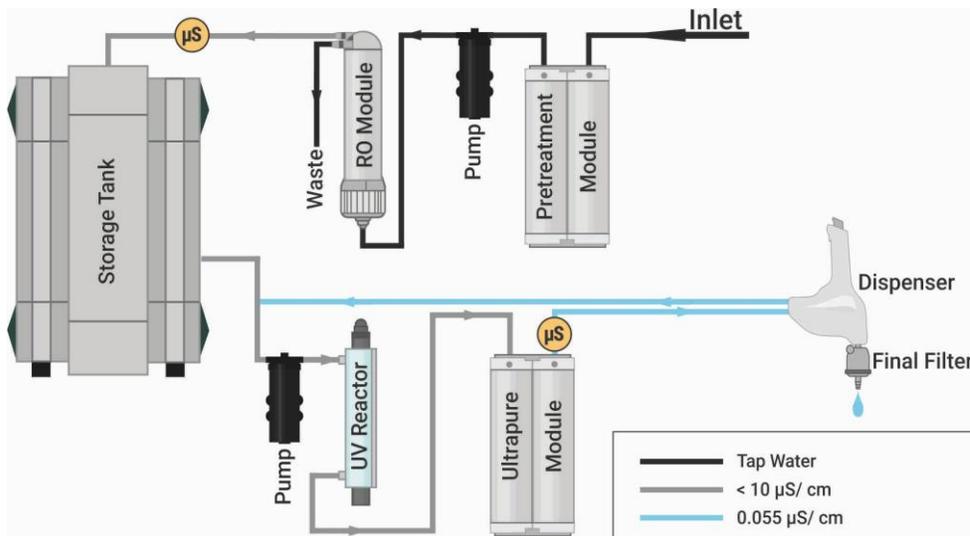


## MembraPure Water Purification Systems

Aquinity<sup>2</sup> models produce ultra-pure water directly from tap water. The Aquinity<sup>2</sup> P10 ultrapure water system is equipped with a reverse osmosis (RO) module to produce deionized water directly into an integrated 10L tank. In the next step Type I grade water is produced with a polisher cartridge. The Aquinity<sup>2</sup> water purification system is available in different configurations (Reagent & Analytical) to meet the specific requirements of ultra-pure water for different applications. Analytical is a version with UV lamp for low TOC value. Life Science grade water with low endotoxin can be generated with a special final filter. An optional integrated TOC sensor allows the user to monitor the TOC content permanently online. Besides that, the Aquinity<sup>2</sup> can be configured as bench top or bench-integrated system, where the control panel will be mounted on the wall.

Technical Specifications of produced water:

- **Resistivity/Conductivity:**  
18.2 MOhm x cm | 0.055 µS/cm; Type I
- **production rate:**  
max. 8 L/h
- **Total Organic Carbon (TOC):**  
< 10 ppb (Reagent)  
< 3 ppb (Analytical)



## MembraPure Water Purification Solutions

### Advantages of the new systems

- Compact housing
- Big touchscreen
- Remote service module
- Menus and wizards easy to use and mistake avoiding
- New fixed and flexible dispenser
- Easy access for cartridge exchange

### OPTIONS

#### Bench integrated configuration (BI version)

To save valuable benchtop space the system can be ordered as BI configuration. The system will be installed underneath the work bench and only the display and dispenser are mounted on the wall.

#### Wall mounted configuration

To save valuable benchtop space the system can be ordered as wall mounted configuration. The whole system can be mounted on the wall with inclined display.

#### TOC-Monitoring (TI version)

The TOC monitoring during production and intermittent measurements during non-use periods allows to check the organic content in water continuously. The TOC value is measured between 1 and 999 ppb and can be shown in the display to monitor organic impurities.

#### Volumetric dispensing

Our dispenser allows the volumetric controlled dispensing of water with an increment of 0.1 L and a tap volume from 0.1 to 99 L. The system prevents overflow of containers and allows to dispense water without supervising.