



MICROWAVE DIGESTION EXTRACTION SYSTEM TANK ECO

The fully enclosed high-pressure Microwave Digestion Extraction System TANK ECO guarantees leak-free operations throughout the digestion process, enhancing digestion capability, especially for challenging and high-pressure-prone samples. It significantly improves recovery rates and result accuracy, particularly for delicate elements, ensuring satisfactory test outcomes.

APPLICATIONS

- **Environmental Analysis:** Prepares soil, sludge, and wastewater samples for heavy metal detection and pollutant analysis.
- **Food & Agriculture:** Ensures accurate digestion of food, feed, and agricultural products for trace element and contaminant testing.
- **Pharmaceutical & Life Sciences:** Supports precise sample preparation for active ingredient verification and biological material analysis.
- **Materials Science & Polymers:** Facilitates digestion of plastics, composites, and pressure-sensitive samples for elemental testing.
- **Mining & Metallurgy:** Improves recovery and analysis of metals and alloys by enabling complete digestion of ores and concentrates.
- **Academic & Research Laboratories:** Provides safe, versatile, and efficient microwave digestion, extraction, and synthesis for advanced research applications.

FEATURES

The fully-enclosed high-pressure digestion technology effectively improves the recovery rate and ensures the accuracy of results

The fully enclosed high-pressure digestion technology guarantees leak-free operations throughout the digestion process, enhancing digestion capability, especially for challenging and high-pressure-prone samples. It significantly improves recovery rates and result accuracy, particularly for delicate elements, ensuring satisfactory test outcomes.

Outer vessel made of high-strength aerospace composite fiber, with both mechanical strength and anti-corrosion ability

The external vessel is constructed from high-strength aerospace composite fiber and entirely enveloped in PFA coating, ensuring it is non-bursting, non-explosive, and tear-resistant. Its overall performance surpasses conventional PEEK materials, especially in edge protection. With a compressive strength of up to 70MPa (about 10,000psi) and a temperature resistance of 600°C, it ensures user safety during operations.

The safety bolt design can provide quantitative and safe pressure relief

The digestion vessel is designed to remain completely sealed and leak-proof during standard operations. In case of overpressure, an automatic safety bolt raises to initiate pressure relief, ensuring safe operations. Under normal conditions, the safety bolt remains intact and doesn't require replacement or any consumables.

The optical fiber and IR temperature measurement system provides precise temperature control while monitoring any abnormality, thereby ensuring accurate results and safety

The Microwave Digestion Extraction System TANK ECO System includes a full vessel IR temperature monitoring system as standard, and an optional integrated multi-core optical fiber temperature measurement system. The full vessel temperature monitoring system effectively detects any anomalies. In the event of a temperature irregularity, microwave transmission halts immediately with an audible alarm. The optical fiber, measuring 2mm in diameter with a Teflon protective layer, features high flexibility and resistance to bending. Its durability is five times longer than that of single-core optical fiber. This precise optical fiber temperature control system mitigates the antenna effect seen with conventional metal temperature sensors in a microwave field.

Microwave Digestion Extraction System TANK ECO

High-precision semiconductor pressure sensor, with strong corrosion resistance and high mechanical strength

Microwave Digestion Extraction System TANK ECO uses an enhanced semiconductor pressure sensor with a specially treated anti-corrosive pressure transmission pathway. Apart from providing precise pressure measurements, this sensor's lifespan has significantly increased, ensuring improved reliability.

7-inch LCD touch screen clearly displays the digestion status and experiment process

The operational software showcases real-time parameters like temperature, pressure, time, and procedural steps. It seamlessly transitions to a coordinate curve interface, allowing users to monitor live temperature and pressure variations throughout the experiment. This feature aids in comprehending the experiment's progress and refining digestion plans.

Powerful and convenient software with FDA 21 CFR Part 11

The software operates on the Android system and incorporates features like electronic signatures, hierarchical permissions, and audit trails, conforming to FDA 21 CFR Part 11 regulations. It includes 8GB storage, an integrated expert method library, and a 7-inch LCD touch screen that displays real-time temperature-pressure curves during operation. Additionally, it automatically tallies the vessel count, simplifying and streamlining experiments.

"Cloud Service" function, the storage can be unlimitedly expanded while ensuring data security

Microwave Digestion Extraction System TANK ECO features a "cloud service" function allowing storage and sharing of data, methods, and related information in the cloud. It offers unlimited data storage expansion while ensuring data security. Users can download the latest software version from public cloud servers, enabling online system updates and significantly enhancing the overall user experience.

Multiple functions of microwave digestion, microwave extraction and microwave synthesis

The Microwave Digestion Extraction System TANK ECO offers various functionalities. It can be outfitted with an organic solvent leakage sensor, perform comprehensive pre-processing prior to microwave digestion and extraction, and support research in microwave-assisted synthesis.

TECHNICAL SPECIFICATIONS

Power	220~240VAC 50/60Hz 20A (110V is also available. Please specify when ordering)
Microwave source	2450MHz, high-energy microwave field transmission
Installed power	1800W

Maximum output power	1000W
Microwave cavity	Large-volume 316L stainless steel cavity, internally and externally coated with multi-layer corrosion-resistant Teflon
Explosion-proof door design	Self-popping explosion-proof sliding furnace door, integrated structure design with prevention of microwave leakage
Pressure measurement system	High-precision semiconductor pressure sensor, with pressure control range: 0~15MPa, accuracy ± 0.01 MPa
Temperature measurement	Full vessel IR temperature control system, with temperature control range: -40~305°C, accuracy: ± 0.1 °C;
Control system	Optional multi-core integrated optical fiber temperature control system, with temperature control range: -40~305°C, accuracy: ± 0.1 °C
Passive protection system	The COT real-time abnormality monitoring system automatically triggers an alarm and discontinues microwave operation upon detecting any abnormalities in the reaction vessels. Additionally, the Safety Bolt design enables controlled vertical release of overpressure.
Software system	Android system; Built-in method library; Cloud methods, data storage and sharing; Wi-Fi remote connection, etc.
Communication interface	USB interface and internet interface
Exhaust system	High-power corrosion-resistant turbo fan, high-efficiency turbulent air cooling, less than 15 minutes cooling down to room temperature
Working environment	0~40°C / 15~80%RH
Physical size / net weight	8.9 inches × 22 inches × 22.6 inches. 99 pounds.
Model of reaction vessel	MP-100
Batch capacity	Standard configuration 6 vessels, up to 8 vessels
Material of inner vessel	TFM
Material of outer vessel	Aerospace composite fiber

Rotor frame type	Single Frame type
Volume of reaction vessel	100mL
Designed temperature	300°C
Designed pressure	15MPa (2,200psi)



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