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MICROWAVE DIGESTION EXTRACTION



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Microwave Digestion Extraction

MDS-Tan40



Application

- Microwave Digestion Workstation is widely used in environmental monitoring, food safety, environmental monitoring, public health and disease prevention and control, petrochemical industry, education and research, metallurgy and other fields.

Features

Comprehensive safety guarantee, combined with anti-corrosion capability

The furnace cavity is made of Grade 316L stainless steel. The 3D adjustable, explosion-proof security door, installed with buffer and choke (to prevent microwave leakage), is self-sealing, impact-resistant and with interlocking linkage mechanism. The aerospace composite fiber outer vessel, wholly sprayed with PFA coating, boasts both higher anti-corrosion and higher pressure-resistance levels, compared to those of PEEK materials.

Dual magnetron inverter control system ensures consistent sample digestion

Microwave Digestion Workstation adopts dual magnetron inverter control system and high-frequency closed-loop PID control, thereby realizing microwave continuous non-pulse output, more uniform microwave field in the cavity, higher energy utilization rate, and consistent sample digestion.

Two LCD screen, displaying real-time operation and experiment status

The 7-inch color LCD touch screen displays real-time data, such as temperature, power, time, and steps. Swift switch to display of coordinate curves greatly facilitates users to better know what is going on with the experiment.

The 5-inch color LCD screen allows clear, real-time observation of operation inside the furnace cavity. Equipped with interfaces, such as USB, network port or Wi-Fi, the vessel, once permitted, can be remotely operated and monitored through computer or Pad.

Full-vessel pressure control technology

The high-pressure digestion vessel adopts elastic pressure relief and self-sealing technology. Under normal operation conditions, the vessel is completely sealed without leakage. Under overpressure conditions, the pressure is automatically and safely released together with excessive reaction gas (CO₂ and nitrogen oxides); then, it is immediately sealed, ensuring smooth progress of subsequent experiments.



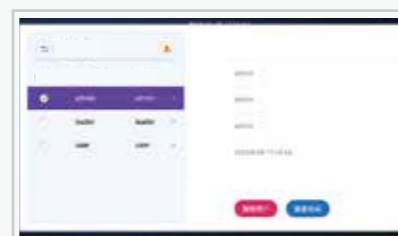
Full-vessel precise temperature control and monitoring, ensuring safety and digestion performance

Non-contact mid-infrared sensors at bottom monitor and visualize real-time temperature change of sample solution inside each digestion vessel. The whole vessel temperature control system effectively monitors abnormal conditions during digestion experiment. Once abnormal temperature is detected, the vessel immediately stops microwave emission and starts to sound the alarm, so that experimental safety is not disturbed.



Smart software operation

The vessel, running on the Android operating system, is convenient and multi-functional. It offers many functions, such as electronic signature, hierarchical permission and audit trail. The software automatically identifies model of the turntable and automatically counts the number of vessels, making the experiment easier and faster, with the absence of tedious manual counting and input.



Various supporting tools, making experiment easy and convenient

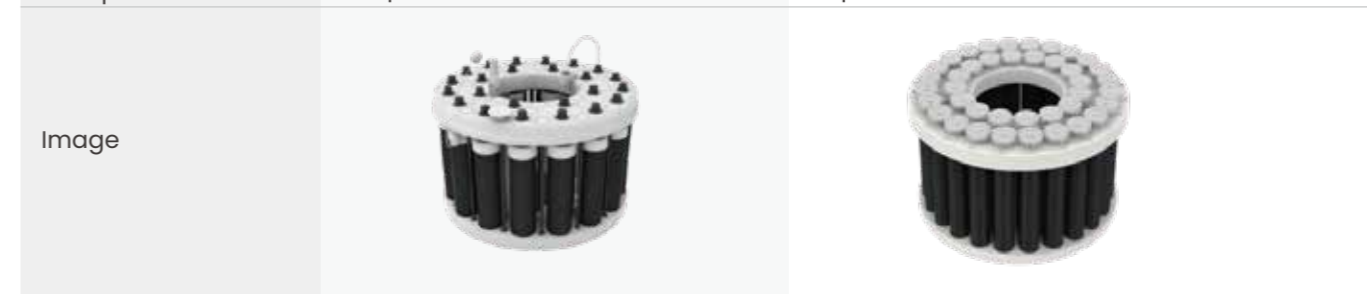
Various tools are supplied to reduce workload for operators and improve the work efficiency of sample preparation. For example, a mobile and flexible tool trolley is able to transfer rotor loaded with sample into and out of furnace cavity, avoiding direct contact between operator and digestion vessel for safety concerns.



Specification

Model	MDS-Tan40
Electricity	220~240VAC50/60Hz20A
Working environment temperature	0~40 °C
Relative humidity for working environment	15~80%RH
Microwave source	2450MHz; Max. microwave output power 2000W, emitted from Dual magnetron inverter high-energy microwave field; non-pulse continuous microwave output
Installed power	3800W
Microwave cavity	Grade 316L stainless steel microwave resonant cavity, with a wall thickness of more than 3mm, sprayed with multi-layer PFA coating.
Furnace exhaust system	Automatically adjusted air volume; cooling to room temperature in less than 15 minutes
Software system	Android operating system (8G memory), built-in video SOP, application method library, electronic door lock, etc.
Dimensions(W*D*H)	600×685×660
Net weight	62kg

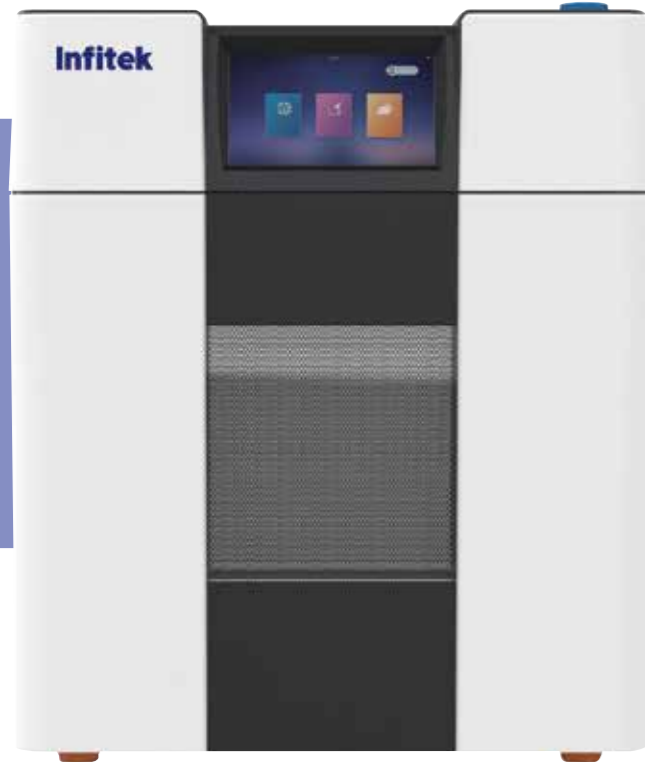
Model	MDS-Tan40	
Batch amount	24 vessels	40 vessels
Inner vessel material	TFM	TFM
Outer vessel material	Aerospace composite fiber	Aerospace composite fiber with TEFLON coating
Inner vessel volume	110mL	55mL
Max. temperature	300 °C	300 °C
Max. pressure	15Mpa	15Mpa



Microwave Digestion/Extraction

MDS-TE6

MDS-TE8



Safe operation



Good flexibility



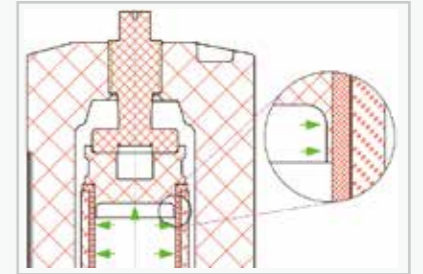
High durability

Application

- Microwave Digestion/Extraction System features safe operation, good flexibility, high durability. Its high-pressure digestion vessel design has greatly improved the digestion ability of tough samples, which is also equipped with multiple safety mechanisms to ensure the safe operation.

Features

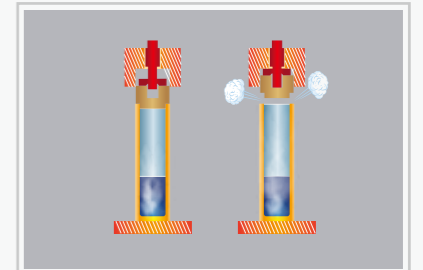
The fully-enclosed high-pressure digestion technology effectively improves the recovery rate and ensures the accuracy of results.



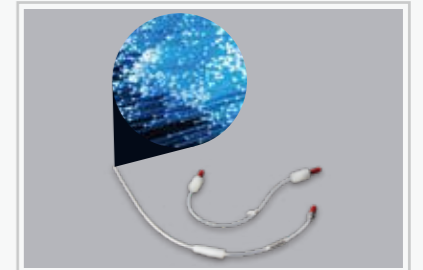
Outer vessel made of high-strength aerospace composite fiber, with both mechanical strength and anti-corrosion ability.



The patented safety bolt design can provide quantitative and safe pressure relief.



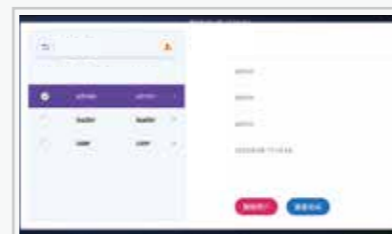
The optical fiber and IR temperature measurement system provides precise temperature control while monitoring any abnormality, thereby ensuring accurate results and safety.



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



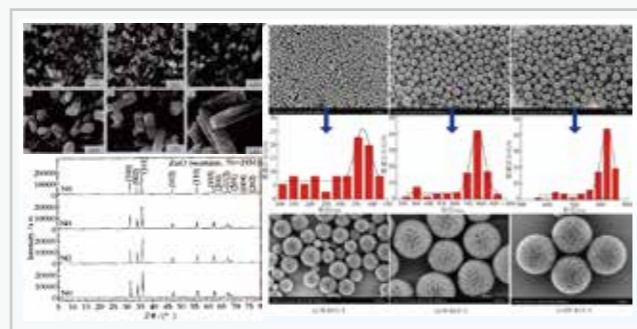
7-inch LCD touch screen clearly displays the digestion status and experiment process.



Powerful and convenient software

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

Multiple functions of microwave digestion, microwave extraction and microwave synthesis.



Specification










Model	MDS-TE6 / MDS-TE8
Electricity	220~240VAC 50/60Hz 20A
Microwave source	2450MHz, high-energy microwave field transmission
Installed power	1800W
Max. 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: $-40\sim 305^{\circ}\text{C}$, accuracy: $\pm 0.1^{\circ}\text{C}$;
Control system	Optional multi-core integrated optical fiber temperature control system, with temperature control range: $-40\sim 305^{\circ}\text{C}$, accuracy: $\pm 0.1^{\circ}\text{C}$ COT real-time abnormality monitoring system,
Passive protection system	which can automatically beep and cut off the microwave when an abnormality occurs to any reaction vessel; Safety Bolt design, providing vertical and quantitative 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	$0\sim 40^{\circ}\text{C}$ / 15~80%RH
Dimensions(W*D*H)	480×560×575mm
Net weight	45kg
Model of reaction vessel	MP-100
Batch capacity	Standard configuration 6 vessels(MDS-TE6), up to 8 vessels (MDS-TE8)
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)

Microwave Digestion Extraction

MDS-610-T6



Features

-  Optional vessel quantity, up to 12 vessels to meet different digestion requirements.
-  Vertical design for even distribution of microwave.
-  Real-time monitoring for both temperature and pressure of each vessel.
-  Contactless sensor monitoring with no burst disk design saves consumables cost and maintenance cost.
-  Imported vessel material for both sample vessel and protection vessel highly ensures safety.
-  7 inch color Touch screen with user-friendly interface for easy operation.
-  Imported CFRP outer shell material with high strength ensures impact resistance.
-  Pre-installed general standard methods, users can also create, save, modify and delete the method.
-  316L industrial stainless steel cavity with multilayer teflon coating avoids acid corrosion, also improves cooling efficiency.



Application

It is newly designed and fully upgraded with higher performance and safer protection system. The smart design and good performance make it warmly welcomed by users.

Specification

Model	MDS-610-T6
Vessel Quantity	6
Vessel Volume	100mL
Temperature Monitoring System	Temperature monitoring: Contactless IR sensor
	Temperature control: Scanning control of each vessel
	Temperature control range: 50~400 °C
	Temperature control accuracy: ±0.1 °C
Pressure Monitoring System	Display accuracy: ±0.1 °C
	Pressure monitoring: Contactless sensor
	Scan monitoring for each vessel
	Pressure control range: 0~15MPa
Sample Vessel Material	Pressure accuracy: ±0.01MPa
	Display Accuracy: ±0.01MPa
	Sample Vessel Material
Protection Vessel Material	Peek+glass fiber
Display	7 inch touch screen
Rotation Mode	360° Continuous rotating
Microwave Tank	316L Stainless steel tank with corrosion-proof coating
Microwave Power	0~1000W (Adjustable)
Microwave Leakage	<5mW/cm ²
Air Exhaust	High power corrosion-proof air blower
Electricity	AC 220V±10%, 10A, 50/60Hz
Dimension(L*W*H)	490*560*630mm
N.W./G.W.	47kg/83kg (Main device+Accessories)
Shipping Dimension(L*W*H)	710*640*880mm (Main device),
	410*400*300mm (Accessories)

Heating Block (Optional)

Model	HB-Y1
Sample Number	12
Aperture and Hole Depth	φ39*65mm
Temperature Control Range	R.T.~250 °C
Temperature Control Accuracy	±0.5 °C
Temperature Setting Resolution	0.1 °C
Heating Power	1600W
Electricity	AC220V±10%
Net Weight	13kg

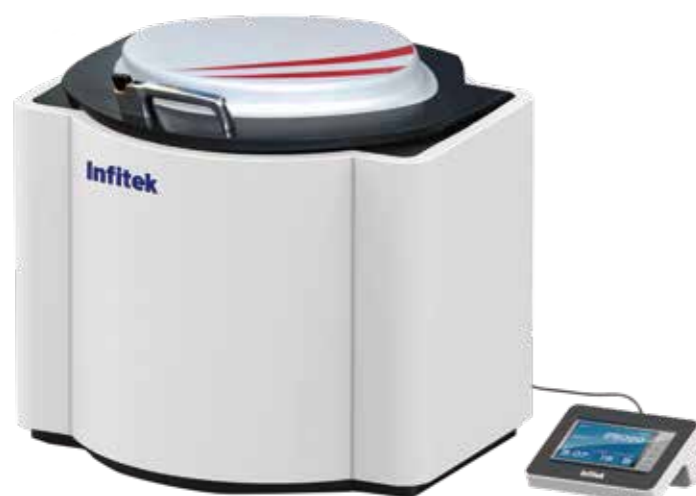


Heating blocks is the optional accessory of microwave digestion system.

It is mainly used for pre-heating of some food, cosmetics and organic samples to check the intensity of sample reaction before digestion. It is also used for acid removing after digestion.

Microwave Digestion/Extraction System

MDS-700-T18



Application

It has been widely used in food, textile, geology, metallurgy, plastics, coal, cosmetics, petrochemicals, biomedicine, environmental monitoring, sewage treatment and other fields.

Features



Special designed sample digestion vessel

The automatic vent and self-resealing structure ensures the digestion vessels can automatically release pressure and instantly reseal when a sudden over-pressure situation occurs.



Safety protection system

With high-strength double locked security door, the real-time temperature and pressure monitoring, automatic adjustment of over-pressure and over-temperature and abnormal sound monitoring, the device can run in a highly safe environment.



Contact-less temperature and pressure monitoring system

The advanced contact-less IR sensor could measure the real-time temperature of sample solutions in each digestion vessel. Meanwhile, the contact-less pressure sensor could monitor the real-time pressure of each vessel.



Power adjustment

The variable frequency resonance or non-pulse(optional) continues rotating mode ensures high efficient and even microwave throughput. It can be set between 0~2000W/0~3000W according to user's requirements.



Large storage capacity

It can edit and store 255 types of programs according to user's requirements and each method program can set parameters (temperature, pressure, time, microwave power) according to their own requirements which provides convenient operation for users.

Specification

Model	MDS-700-T18
Vessel Quantity	18
Vessel Volume	100mL
Temperature Monitoring System	Temperature monitoring: Contactless IR sensor
	Temperature control: Scanning control of each vessel
	Temperature control range: 50~400 °C; Temperature control accuracy: ±0.3 °C
Pressure Monitoring System	Contact-less pressure sensor
	Pressure control range: 0~10MPa
	Pressure control accuracy: 0.01MPa
Vessel Material	Inner: imported TFM
	Outer: imported PEEK+glass fiber
Display	7-inch touch screen
Rotation Mode	360° Continuous rotation
Microwave Power	0~2000W adjustable/ 0~3000W adjustable
Microwave Leak	<5mW/cm ²
Microwave Frequency	2450Hz
Max. Working Pressure	6MPa
Max. Working Temperature	250 °C
Inner Vessel Temperature Limit	300 °C
Electricity	AC 220V, 16A, 50/60Hz
Dimension(L*W*H)	640*630*590mm
N.W./G.W.	75kg/148kg(Main device+Accessories)
Shipping Dimension(L*W*H)	800*800*810mm (Main device),
	620*590*560mm (Accessories)

Heating Block (Optional)

Model	HB-Y2
Sample Number	20
Aperture And Hole Depth	φ41*150mm
Temperature Control Range	R.T.~250 °C
Temperature Control Accuracy	±0.5 °C
Temperature Setting Resolution	0.1 °C
Heating Power	2000W
Electricity	AC220V±10%
Net Weight	34kg



Heating blocks is the optional accessory of microwave digestion system.

It is mainly used for pre-heating of some food, cosmetics and organic samples to check the intensity of sample reaction before digestion. It is also used for acid removing after digestion.

Microwave Digestion/Extraction System

MDS-800-T40



Application

It is widely used in food, textile, geology, metallurgy, coal, biology, cosmetics, petrochemical, environment, waste water treatment, battery manufacturing fields, etc.

Features



Special designed sample digestion vessel

The automatic vent and self-resealing structure which won national patent ensures the digestion vessels can automatically release pressure and instantly reseal when a sudden over-pressure situation occurs.



Contact-less temperature and pressure monitoring system

The advanced contact-less IR sensor could measure the real-time temperature of sample solutions in each digestion vessel. Meanwhile, the contact-less pressure sensor could monitor the real-time pressure of each vessel.

Each real-time temperature and pressure value is displayed during the whole digestion process, allowing a clear check of digestion conditions.



Large storage capacity

It can edit and store 255 types of programs according to user's requirements and each method program can set parameters (temperature, pressure, time, microwave power) according to their own requirements which provides convenient operation for users.



Safety protection system

With high-strength double locked security door, the real-time temperature and pressure monitoring, automatic adjustment of over-pressure and over-temperature and abnormal sound monitoring, the device can run in a highly safe environment.



Power adjustment

The variable frequency resonance or non-pulse(optional) continues rotating mode ensures high efficient and even microwave throughput. It can be set between 0~3000W according to user's requirements.

Specification

Model	MDS-800-T40
Vessel Quantity	40
Vessel Volume	50mL
Temperature Monitoring System	Temperature monitoring: Contactless IR sensor
	Temperature control: Scanning control of each vessel
	Temperature control range: 50~400 °C; Temperature control accuracy: ±0.3 °C
Pressure Monitoring System	Contact-less pressure sensor
	Pressure control range: 0~10MPa
	Pressure control accuracy: 0.01MPa
Vessel Material	Inner: imported TFM
	Outer: imported PEEK+glass fiber
Display	7-inch touch screen
Rotation Mode	360° Continuous rotation
Microwave Power	0~3000W adjustable
Microwave Leak	<5mW/cm ²
Microwave Frequency	2450Hz
Max. Working Pressure	6MPa
Max. Working Temperature	250 °C
Inner Vessel Temperature Limit	300 °C
Electricity	AC 220V, 16A, 50/60Hz
Dimension(L*W*H)	640*630*590mm
N.W./G.W.	78kg/155kg(Main device+Accessories)
Shipping Dimension(L*W*H)	800*800*810mm (Main device),
	620*590*560mm (Accessories)

Heating Block (Optional)

Model	HB-Y3
Sample Number	56
Aperture And Hole Depth	φ32*118mm
Temperature Control Range	R.T.~250 °C
Temperature Control Accuracy	±0.5 °C
Temperature Setting Resolution	0.1 °C
Heating Power	2000W
Electricity	AC220V±10%
Net Weight	40kg



Heating blocks is the optional accessory of microwave digestion system.

It is mainly used for pre-heating of some food, cosmetics and organic samples to check the intensity of sample reaction before digestion. It is also used for acid removing after digestion.