MDS-100A-N

MDS-100A-N, Microwave Sample Preparation Workstation

12-vessel High-throughput processing capacity, meeting the needs of all kinds of sample preparation; Advanced multicore integrated optical fiber temperature control system, with precise temperature control and uniform digestion. UCOS-II operating system, with remote control observation, easy and comfortable operation. Aerospace fiber outer vessel, COT real-time temperature and pressure abnormity monitoring system and other multiple safety protection design; Free lifetime warranty commitment for the core part-magnetron; With over 20 years of experience in the industry MRC is known as a innovation leader with numerous patents.
The MDS microwave digester has been adhering to the principle & concept of "safe experiement", "efficient and convenient operation" & "durable use" from R&D to production. It can be widely used in routine laboratories and also applied under extreme conditions. MDS adopts advanced dual magnetron non-pulse frequency microwave heating technology, realizing the high power microwave heating & homogeneous heating; MDS has more than 20 safety guarantee technologies to ensure that MDS has high level of safety performance and data accuracy; At the same time, MDS's highly intelligent man-machine dialogue operation system and wireless control module make the experiment process become efficient, convenient and humanized, and bring safe and comfortable experience to users.

Features:

- Optical fiber temperature control system is safe, meanwhile it can realize accurate temperature control. Optical fiber avoids the drawbacks of antenna effect of conventional metal resistance temperature sensor, and solves multi-vessel digestion temperature deviation and uneven heating. MRC adopts advanced multicore integrated optical fiber sensor, with an optical fiber diameter of 2 mm, its uses Teflon protective coating, and has small bending curvature, good fold-resistant and flexibility. The service life is 5 times longer than the single core optical fiber.
MDS adopts advanced high-precision semiconductor pressure sensor, the whole conduction path conducts the anticorrosion treatment, realizing precise pressure control, with pressure precision of ±0.01MPa.

- MDS series has 2 magnetron, and its inverter microwave heating makes real-time adjustment of microwave output power according to the temperature and pressure feedback, thus the microwave f ield is more uniform and the control more precise. Inverter microwave heating can avoid the disadvantages of pause heating and frequent startup, effectively protect the magnetron, and reduce energy loss. Double magnetron heating and professional microwave focusing design can make the magnetic field distribution inside the furnace chamber more even, ensuring the consistency of the experimental sample digestion.
- MDS adopts aerospace composite fiber materials Xtra Fiber to make the outer vessel which is invincible that can withstand 80 MPa pressure, completely eliminating the possibility of radial blasting.
Its corrosion resistance, high temperature resistance and shock pressure and many performance indexes are excellent, fundamentally solving the dangers in the process of using.

- MDS adopts ARM chip equipped with UCOS-II operating system, with stable and reliable operation. It uses 7 inches of LCD touch screen, with touch control for operation, smooth & simple. The screen gives the real-time display temperature- pressure curve. It has a built-in expert method library, which can be edited and store user methods. Built-in COT real-time T/P abnormity monitoring system can give automatic alarm when any reaction vessel has abnormal temperature and pressure, and cut off the microwave so as to protect the instrument. PRO version (MDS-PRO) has the Wi-Fi wireless control module, not only realizing point to point control between the computer and the microwave digestion instrument, but also using a tablet PC to realize control and real time observation within the local area network (LAN). It brings better experience for "comfort experiment & safe experiment". PRO version also adopts double screen design and is equipped with 5 inches of LCD color display for real-time monitoring of digestion vessel operation inside the furnace chamber through internal camera.

- With MDS 12-vessel of high throughput digestion capacity, it meets the pretreatment requirements of bulk samples. It adopts high-strength composite materials for enhancing strength, & reaches 1.7 tons of tensile test requirements, & its high pressure resistant frame is of thickening customization & can bear the high pressure during digestion. PEEK elastic tablet can resist high temperature, has larger rigidity and stable dimension, reach 19 MPa for bending strength and compression strength at 260°C, and can protect PFA vessel cover from being damaged during the digestion. MDS digestion adopts the design of automatic pressure release, which puts an end to the occurrence of dangerous high pressure explosion, and cancels safety membrane and other consumables, simple use and low cost.

• MDS's 316L stainless steel industrial furnace chamber adopts modular design concept, providing great convenience for the upgrading and maintenance of equipment. The furnace door is made of multiple protective layers, and internal furnace chamber adopts multi-layer Teflon coating, greatly improving the service life and safety guarantee of the instrument. The optimized groove structure design can eliminate the microwave leakage. It will automatically cut off microwave when the door is opened naturally or forcibly, protecting the user's safety. Efficient exhaust system design can realize the fast and safe air cooling (drop from 200°C to 80°C within 15 minutes), improving operation efficiency.

Model	MDS-100A-N
Power	220-240 VAC 50/60Hz 16A
Microwave source	2450MHz dual magnetron design
Installed power	2850W
Maximum output power	1600W, microwave non-pulse continuous automatic frequency conversion control
Microwave chamber	316L stainless steel chamber, applied with multi-layer anticorrosive Teflon inside & outside
Door design	Safety door designed based on the 3D directional explosion mechanism, with the integrated groove structure design of microwave leak prevention
Pressure monitoring system	High precision semiconductor pressure sensor, with pressure control range: 0-10MPa(1500psi), accuracy: ±0.01MPa
Temperature monitoring system	Multi-core integrated optical fiber temperature control system, Teflon protective coating, temperature measuring range: -40-305°C, accuracy: ±0.1°C
Passive protection system	COT real-time temperature and pressure monitoring system, automaticly alarm when any reaction MDS has abnormal T/P, and cut off the microwave immediately to protect the user and instrument.
Software	ARM chip equipped with UCOS-II operating system for multi-task operation, MDS equips with 7 inch LCD color touch screen, and connected to computer for remote control.
Wireless control system	MDS-PRO version is equipped with Wi-Fi wireless control module, tablet PC can be used to realize control and real-time observation of the internal operation inside furnace chamber.
Communication interface	MDS-PRO version is equipped with 232 serial port and USB interface
Video monitoring	MDS-PRO version is equipped with 5 inch LCD color screen, which can conduct the real-time monitoring of digestion MDS operation inside the chamber through the internal camera.
Chamber exhaust system	High-power corrosion-resisting turbine fan, with turbulent and efficient air cooling, fast 15 min cooling from 200°C to 80°C.
Working environment	0~40°C, 15~80%RH
Physical size/weight	600 × 685 × 660(WxDxH) mm, 75 KG