Supplier Of R&d And ProductionOf Sample Pre-treatment Instruments

Microwave digestion instrument-technical white paper

About Us:-We are a scientific instrument research and development and manufacturing company established in China, mainly focusing on the research and development, production and sales of heavy metal pretreatment equipment. The products mainly include high-purity graphite electric heating plate of classical wet method, improved and upgraded high-purity graphite dissociator and new and efficient fully automatic microwave decomposition system.

parameter

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1. Brand: Tianezk

2. Model number: R5- S / M / L

3. Control system

▲3.1 Microwave frequency: 2450 MHz, non-pulse continuous automatic frequency conversion control, 0-100% power automatic continuous adjustable.

3.2 Industrial grade magnetron: maximum microwave output power of 3000W.

▲3.3 Temperature control system: using wireless penetrating infrared temperature sensor, rather than wired connection, temperature measurement range 0-600℃, display accuracy ± 0.1℃.

3.4 Pressure control system: the safe and efficient special pressure sensor can monitor the pressure in all digestion tanks in real time. The pressure measurement range is 0-15 Mpa, and the pressure control accuracy is ± 0.01 Mpa.

3.5 Multi-function operation mode, which can be expanded to microwave extraction, microwave synthesis, etc.

3.6 The digestion tank identification system shall automatically adjust the microwave output power according to the number of digestion samples, the type of digestion tank and the current temperature, so as to reduce the temperature fluctuation and improve the uniformity of sample digestion.

▲3.7 The digestion tank positioning system can accurately lock the positioning position of the digestion tank, draw the temperature and pressure column chart of the digestion tank, display the temperature and pressure of each digestion tank in real time, eliminate the abnormal temperature and pressure of the digestion tank, automatically alarm and stop working. Functional pictures of the column diagram should be provided.

▲3.8 Give the running state of the instrument through the light color change to improve the safety protection level.

3.9 The abnormal tank temperature and pressure instrument can automatically alarm

and stop working.

▲4. Security system

4.1 The instrument is equipped with the abnormal sound monitoring system, which actively monitors the abnormal sound during the operation of the instrument to ensure the operation safety of the instrument.

4.2 The instrument is equipped with the flame monitoring system, which actively monitors

4.3 The instrument is equipped with solvent sensor, which actively monitors the acid gas overflow in the cavity during the instrument operation to ensure the safety of the instrument operation.

4.4 The component self-inspection system, real-time self-inspection of the equipment status. When the fault occurs, the instrument will automatically pop up the dialog box to indicate the fault state, and save it through the operation log record.

▲5. Safety of the furnace door and furnace cavity

5.1 Six-storey steel structure safety furnace door adopts buffer floating design to ensure the safety in the experiment process.

5.2 Mechanical locks and electronic locks are used to coordinate and ensure that the furnace door cannot be opened during operation. When the furnace door is opened abnormally, the instrument will automatically cut off the microwave and stop working.

5.3 The furnace cavity is made of 316L industrial grade stainless steel, and the furnace cavity is sprayed with up to 6 layers of PFA anti-corrosion coating, and the furnace cavity is guaranteed for life.

5.4 The furnace door cannot be opened before the temperature drops to the safe temperature. The temperature of the furnace door can be set in the system.

6. Operating system

6.1 Microcomputer control technology, which can realize historical data view, data export and import.

6.2 Capacitive LCD touch screen, real-time display includes: temperature, pressure, heating time, constant temperature time, microwave power, reaction process.

6.3 Instrument built-in method library, can directly select the call digestion scheme, can store ≥ 200 methods.

6.4 Eliminate the independent rotary table structure of the rotor, and the rotary table rotates synchronously in the same direction without rotating back and forth. There is no pause in the rotation process to ensure the uniformity of microwave heating.

▲6.5 The instrument can send the fault, alarm, operation status E-mail report to the operator.

6.6 The cavity camera system is optional to observe the cavity situation in real time through video.

▲6.7 It has multi-level management function. Operators need to log in to the personal account password to operate the instrument. The instrument can generate real-time report of the instrument operation according to the operation content of the operator, so as to facilitate data tracing and tracing.

7. Air exhaust system and cooling system

▲7.1 Super centrifugal fan overhead installation, in line with the principle of heat flow upward movement, quickly discharge the high temperature gas in the cavity, and effectively discharge the exhaust gas due to the overflow tank.

▲7.2 The furnace chamber is equipped with two sets of turbine fans. When the operation is completed, the cooling fan is automatically started to quickly cool down the digestion tank components and effectively improve the cooling efficiency.

8. Remove the tank assembly

8.1 High strength UPE corrosion resistant rotary table rack, optional 1-24/30/40/44 igestion tanks.

8.2 The voluminous volume of the digestion tank is 60/85/100ml, which meets the requirements of bulk sampling and can be extended in various digestion modes.

▲8.3 digestion external tank: high strength PEEK hybrid fiber material or aerospace fiber conforms to the material optional, temperature resistance of 600℃, pressure resistance of 20 Mpa.

▲8.4 Internal digestion tank: using imported TFM material, temperature resistance of 310℃, withstand pressure of 6MPa, maximum working temperature of 250℃, maximum working pressure of 6MPa.

8.5 Self-relief pressure digestion tank, overpressure automatic pressure elief, no vulnerable consumables in the process of use, effectively reduce the use cost.

8.6 The disintegration rotor can be selected as an integrated rotor or a single embedding method of a digestion tank.

9. Acid whisker

9.1 With a special electric heating acid driver, high purity graphite material, acid and alkali corrosion resistance.

9.2 Temperature control: room temperature-250℃, used for acid processing after sample digestion.

9.3 The time temperature can be set, and the whole machine has multiple protection such as overvoltage, overcurrent and overheating.

10. Configuration list

10.1 One host of microwave digestion machine

10.2 One set of wireless temperature sensing system

10.3 One set of special pressure sensing system

10.4 1 set of abnormal sound sensor

10.5 1 set of flame sensor

10.6 One set of solvent sensor

10.7 The internal and external tanks (including tank lid, internal plug, tank body and

external tank) shall match the number of rotary tables of the dissolution tank

10.8 One set of the sample rack of the digestion tank

10.9 With 1 acid driver

10.10 Kit 1 set

10.11 1 exhaust pipe

10.12 1 set of electronic torsion device9.9 1 set of electronic torsion device