
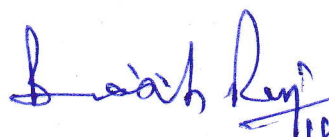


## Tender Specifications for Microwave Digestion System

- System must be based on continuous microwave heating technology and must have provision to control temperature and pressure simultaneously inside the individual vessels.
- The cavity chamber should be made of corrosion resistant Stainless steel with multilayer fluoropolymer coating for physical protection as well as chemical resistance.
- Microwave digestion system must have a delivered power output with a range of minimum 800 Watt or better with microprocessor controlled single or dual magnetron system.
- Max. Temperature: 250 °C or more and Max. Pressure: 40 bar or more
- Vessels should be fully closed, corrosion resistant to any acid and gases, should not crack, break, explode in case of overpressure development for any unknown or aggressive reactions.
- System must have in-built operating system with an in-built color touchscreen for entry of operating parameters and sample and it should display with graphical representation of reaction parameters and the max temperature of individual reaction vessel on the screen. The parameters must be recorded in real-time.
- System should have in built programs including EPA methods & as well as facility of creating new user defined programs.
- System software must automatically adjust the power delivery based upon sample load, number of vessels and pre- programmed control settings. Users need not re-optimize maximum power everytime the number of vessels changes.
- System must have a device to protect the magnetron from back-reflected microwave energy with temperature sensors on the magnetron to prevent overheating.
- System should have capability to accommodate min. 12 or more high-pressure vessels at a time. The rotor must be provided with a lid for protection of cavity from acid vapors/fumes.
- Vessel Volume: min. 50 mL or more
- System must be equipped with an advance temperature sensor to monitor internal temperature of reaction vessels and display the internal temperature of each reaction vessel on the screen.
- Microwave transparent and reagent resistant suitable inert polymeric vessel materials like TFM / PTFE / Fluoro polymer. Overpressure release mechanism of the vessel must be controlled by means of suitable springs for precise opening pressure.
- A temperature calibrator with a validity certificate of 3 years for accurate temperature measurement must be supplied along with the instrument.
- System should have in-built exhaust system for taking out fumes from the cavity in case of over pressure release.
- The vessels should be cooled inside the oven. Cooling from working temperature to 70 °C should be in less than 10 – 12 minutes.
- Vendor must also have a team of application personnel to provide user on-site training and application training to the scientists for at least 2 days at the time of installation free of cost.
- Standard laboratory fume hood: Size 4' x 2' x 2'
- 36 months warranty from the date of installation.
- 5 kVA online UPS (Numeric/APC/Powerone make) with Digital LED display
  - Output Power Capacity: 3.5 kw / 5 kVA with Efficiency at full load : 85% or more
  - Output Voltage distortion: < 3% and Load crest factor: 3:1
  - Leak-proof sealed Lead-Acid Battery with battery racks and 30 minute back up
  - 2 years replacement warranty

  
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