

UltraWAVE

Microwave Digestion System

TECHNICAL SPECIFICATIONS

Hardware

- High pressure single reaction chamber (SRC) in stainless steel.
- Chamber volume 990 ml with 900 ml TFM liner.
- SRC design enables the same temperature and pressure to be achieved in all samples simultaneously.
- Auto-lift mechanism for automated loading of the sample rack into the SRC.
- SRC securely closed by double interlocked stainless steel clamps.
- Sensors ensure the correct positioning of the SRC cover during automatic opening and closing of the SRC.
- High microwave power (1500W) for fast heating.
- Microwave energy optimized to the shape of the SRC for even energy distribution (no sample rotation is needed) and maximum efficiency.
- Thick acrylic shield with automated lift/close for maximum operator safety.
- Integrated twin exhaust system extracts acid fumes away during chamber opening.
- Pre-pressurization of the chamber with an inert gas to prevent sample boiling and eliminate risk of cross-contamination.
- Automated pressure release at the completion of the microwave program and cooling step.
- SRC is water cooled for fast cool down step and increased sample throughput.
- Failsafe mechanism to safely release pressure inside the cabinet in the case of an overpressure situation (over 199 bar).
- Analog manometer for easy reading of SRC pressure from across the lab.
- Safety valve enables manual release of pressure after a digestion cycle, in case of power failure.

Temperature and Pressure Control

- Temperature sensor to directly monitor and control the temperature in the SRC and in all vials simultaneously.
- Operating temperature up to 300°C.
- Pressure transducer to directly monitor and control the pressure in the SRC and in all vials simultaneously.
- Operating pressure up to 199 bar.
- Built-in temperature sensor to monitor and control the external temperature of the chamber, preventing overheating.
- Built-in sensors to monitor magnetron and microwave antenna temperatures.

Control Terminal

- Industrial grade touch-screen controller with high resolution 6.5" screen and 65000 color display.
- 1 USB port for printer, 2 PS2 ports for mouse and keyboard, 3 RJ 45 ports for external devices.
- Methods and runs can be saved on a PC-compatible removable flash-card or USB pen-drive.

Other Features

- Capability to process different sample types and different digestion chemistries within in the same run, and at the same temperature and pressure conditions.
- Disposable glass vials can be used, eliminating the vial cleaning step.
- Capability to digest samples in glass, quartz or PTFE-TFM vials - even within the same run.
- Vials fitted with simple, loose fitting caps - vessel assembly/disassembly is eliminated.
- Increased sample weight capability compared to closed vessel digestion
- Minimum acid volume 2-4mL - lower reagent blanks.
- Digested sample can be stored in the vial - no transfer error or additional contamination risk due to transfer.

Rack Configurations

Number of Vial	Vial Material	Vials Volume (ml)
4	Glass (disposable)	70
	PTFE/TFM	70
5	Glass (disposable)	35
		40
	Quartz	25
		40
	PTFE/TFM	25
15	Glass (disposable)	15
	Quartz	10
		15
22	PTFE/TFM	15
	Glass (disposable)	10
	Quartz	10
	PTFE/TFM	7

Specifications are subject to change without notice.