



MICROWAVE DIGESTION SYSTEMS

SCP SCIENCE offers 3 types of microwave digestion systems. **NovaWAVE SA**: a focused microwave digestion system which can digest up to 12 samples simultaneously; each with an independent method, if desired. **NovaWAVE FA**: a fully automated version of the SA designed for processing of up to 14 racks for a potential of up to 168 samples and including automated venting and cooling. **MiniWAVE**: a budget friendly, 6 position digestion module with real temperature feedback with controller able to expand to four digestion modules. All **NovaWAVE** systems can use either Quartz or PFA Teflon® vessels for digestions.

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Microwave Digestion SYSTEMS

SCP SCIENCE microwave digestion systems share the following features:

Safety

Patented Auto Vent and Seal Vessel Technology

Vessels operate at 34 atms (500 psi) and are pretested to 90 atms (1305 psi)

13 gauge Stainless Steel tunnel/cavity, to protect the user

Over temperature auto shut down

Dual explosion guards on tunnel/cavity entries

Racks and Vessels

Volume calibrated Quartz vessels, for normalization

No assembly PFA Teflon® vessels with Quartz sleeve supports

Calibrated Safety Pressure Caps with a pressure traceability certificate

User Interface

8.4" Color Touch Screen Controller

Method creation by single key and drop down menus

View and generate detailed reports, Meets FDA 21 CFR Part 11

Multilevel, password protected access – operator and administrator

Methods

Unlimited number of user created methods

Pre-programmed EPA and DIN methods

Multiple digestion step methods for 'Time to Temperature' and 'Time at Temperature'

Digestion temperatures up to 250 °C

RACK AND QUARTZ DIGESTION VESSELS

The **SCP SCIENCE** Digestion Racks with auto vent and seal Safety Pressure Caps and volume-calibrated Quartz Digestion Vessels provide faster assembly over classical Teflon® Digestion Vessel Systems. In less than 15 minutes, 12 samples can be weighed, acid added, Pressure Cap adjusted and the digestion begun.

Quartz vessels have the following advantages:

- Volume calibrated Quartz Digestion Vessels at 50 ml for normalization
- Observe what is being digested in Quartz
- Easier to wash than Teflon® vessels
- Reduced cross contamination vs Teflon® vessels
- Lower replacement cost than Teflon®

Racks have the following advantages:

- Rack and Vessels can be assembled in minutes
- Vent and seal technology (34 atm., 500 psi)
- Tube extenders to increase heating efficiency
- Triple Teflon® coated Rack components for chemical resistance

IMPROVE YOUR METHODOLOGY – SPEAK TO A SPECIALIST!

Are you digesting oil, food, biological, metallurgical or environmental samples in your laboratory and wish better results? Our experienced Applications Laboratory is available to assist you. Contact us at sampleprep@scpscience.com.

- Improve method development
- Optimize recovery levels
- Increase sample throughput

A growing library of microwave Application Notes is available on request. These application notes demonstrate the ease of use and effectiveness of the **NovaWAVE** and **MiniWAVE** Microwave Digestion Systems.

Contact your Sales Representative or local distributor for more details.

US Patent Numbers 8,454,910 B2; 8,845,983; 8,852,534.

MinWAVE DIGESTION SYSTEM

Features
Budget friendly version for smaller sample loads
Audit trail provides complete digestion details, method, sample ID and temperature profile
Dual safety interlock switches
13 gauge Stainless Steel cavity Teflon [®] Coated for operator safety and corrosion resistance
Real time temperature monitoring and control
Single Controller - can operate up to 4 Modules
Future Expansion by adding only Modules

MinWAVE is a top-loading, compact, axisymmetric Microwave Digestion System consisting of a Touch Screen Controller and up to 4 Digestion Modules connected via USB cables. Each Module is able to digest up to 6 samples simultaneously in 75 ml Quartz or 75 ml Teflon[®] vessels. Modules can be programmed and monitored using separate or the same digestion method.



ORDERING INFORMATION

Description	Specifications	Catalog No.
Touch Screen Controller	100-240 V / 1 Amp	010-600-007
Microwave Module	115 V / 15 Amp	010-600-006
Microwave Module	230 V / 8 Amp	010-600-008
Rack 6 place with Quartz Vessels	75 ml	010-600-009
Rack 6 place with Teflon [®] vessels	75 ml	010-600-010
Startup kit	---	010-600-120

ACCESSORIES



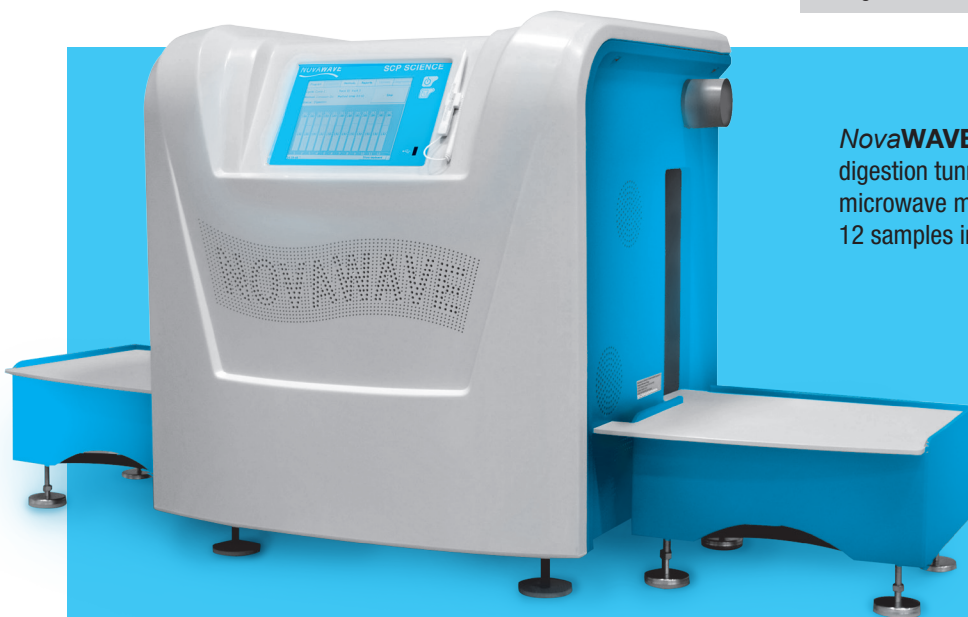
Description	Qty	Catalog No.
75 ml calibrated Quartz vessels (45 and 50 ml Calibration)	(Pk/6)	010-600-071
75 ml PFA Teflon [®] vessels	(Pk/6)	010-600-073
75 ml Quartz sleeves for 75 ml PFA Teflon [®] vessels	(Pk/6)	010-600-074
PFA Teflon [®] caps for Quartz vessels	(Pk/6)	010-600-060
PFA Teflon [®] caps for PFA Teflon [®] vessels	(Pk/6)	010-600-061
Safety Pressure Cap	Each	010-600-015
Weighing Support for Quartz vessels	Each	010-600-110
Weighing support for PFA vessels	Each	010-600-115
Mixing cap for both PFA and Quartz vessels	Each	010-600-100
Venting Tool	Each	010-600-070
Startup Kit, MinWAVE	Each	010-600-120

NovaWAVE SA DIGESTION SYSTEM

NovaWAVE SA is a Stand Alone microwave digestion tunnel system, created in this manner to improve productivity and also for automation. The Touch Screen Controller allows for fast and simple programming to digest a variety of samples. The software was designed to track sample ID, date and time of the digestion, operator ID and the actual temperature profile of each sample digested. **NovaWAVE** employs real-time temperature monitoring and control of each sample independently in each rack. The software includes a series of safety messages to ensure safe and complete digestions. The racks can handle both volume calibrated Quartz digestion vessels and Teflon® vessels at the same time.

The **NovaWAVE** family of Microwave Digestion Systems was developed with the following goals:

- Reporting of individual sample temperature profiles vs. target profiles
- The ability to mix and match different sample matrices in one digestion run
- Automation of the digestion process
- The easiest vessel assembly in the market
- Multiple, simple method programming
- Position numbered, Balance Transfer Rack to simplify sample movement from weighing station to acid addition to the Digestion Rack



NovaWAVE is a fully automated, sample digestion tunnel employing 12 dynamically created microwave micravities to simultaneously process 12 samples in Quartz or Teflon® vessels.

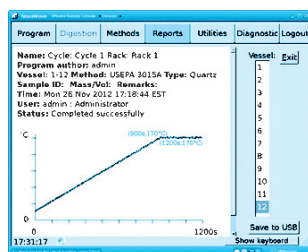


Features

Digest 12 samples simultaneously	Independent sample temperature feedback, in real time, controls the heating process	Twelve individual magnetron power sources and 12 IR temperature sensors allow users to customize a method for each vessel allowing for digestion of up to 12 different sample types simultaneously, each with their own digestion parameters
Simplified Vessel Assembly with Vent-and-Seal Technology to reduce Rack preparation time	All metal parts are Triple Teflon® coated with PTFE and PFA	
Assign Application Methods in 3 ways – by cycle, rack and sample	13 gauge Stainless steel tunnel	
Multiple safety features to protect the operator and samples	Quartz or Teflon® vessels for flexibility in reagent use	Monitor individual sample progress in Real Time with the built in Touch Screen interface

NovaWAVE FA DIGESTION SYSTEM

NovaWAVE SA can be upgraded to the fully automated **NovaWAVE FA** mode through the acquisition of the Transporter and additional racks. With the use of volume calibrated Quartz vessels for most applications and/or Teflon® vessels with HF acid, hundreds of samples can be processed easily in a day.



A Fully Automated **NovaWAVE FA** Microwave Tunnel Digestion System with all the software and operational parameters employed in the Model **NovaWAVE SA**; plus the Transporter, Auto-Cooling and Auto-Venting Stations to complete the automation.

Vessels are placed in racks which are moved under software control into the microwave tunnel. Twelve microwave mini cavities are dynamically formed and energy is delivered to each mini microwave cavity according to the digestion method selected. On exiting the tunnel, the rack proceeds to the Cooling Station as the second rack enters the tunnel to begin its digestion sequence. Once the digestion of the second rack is completed, it moves to the Cooling Station with the first rack moving to the Auto-Venting Station. Here, vessels are vented automatically when they reach the pre-set temperature assigned in the method.



Features

Automate the **SA** model with the Transporter System allowing automatic processing of up to 14 racks of 12 samples for a total of 168 samples

A mixture of 50 ml or 75 ml racks may be run on the **NovaWAVE FA**

Auto-Cooling and Auto-Venting Stations complete the automation process. Samples are ready for analysis on an ongoing basis

Teflon® and Quartz vessels may be run in the same rack at the same time

Microwave Digestion SYSTEMS



ORDERING INFORMATION

Description	Qty	Catalog No.
NovaWAVE Stand Alone (SA) Microwave Tunnel System, complete with entry/exit platforms	Each	010-600-001
NovaWAVE Fully Automated (FA) system complete with Transporter, Auto-Cooling and Auto-Venting stations	Each	010-600-002
Transporter with Auto-Cooling and Auto-Venting stations (required to upgrade model SA to FA)	Each	010-600-003
Rack Complete, 50 ml, Quartz, SA	Each	010-600-055
Rack Complete, 75 ml, Quartz, SA	Each	010-600-075
Rack Complete, 50 ml, Teflon®, SA	Each	010-600-057
Rack Complete, 75 ml, Teflon®, SA	Each	010-600-077
Rack Complete, 50 ml, Quartz, FA	Each	010-600-155
Rack Complete, 75 ml, Quartz, FA	Each	010-600-175
Rack Complete, 50 ml, Teflon®, FA	Each	010-600-157
Rack Complete, 75 ml, Teflon®, FA	Each	010-600-177
Quartz vessel, 50 ml, calibrated	(Pk/6)	010-600-051
Quartz vessel, 75 ml, calibrated	(Pk/6)	010-600-071
Teflon® PFA vessel, 50 ml	(Pk/6)	010-600-053
Teflon® PFA vessel, 75 ml	(Pk/6)	010-600-073
Support Sleeves for 50 ml Teflon® vessels	(Pk/6)	010-600-054
Support Sleeves for 75 ml Teflon® vessels	(Pk/6)	010-600-074

Description	Qty	Catalog No.
PFA Teflon® caps for Quartz vessels	(Pk/6)	010-600-028
PFA Teflon® caps for PFA Teflon® vessels	(Pk/6)	010-600-027
Teflon® Liner with Plunger	(Pk/6)	010-600-020
Spacer Rack (14 positions less the number of racks ordered equal the number of spacer racks required)	Each	010-600-017
Barcode reader	Each	010-600-034
Startup kit SA / MiniWAVE	Each	010-600-120
NovaWAVE and MiniWAVE Exhaust Hose Assembly 2.5 in. (65 mm)	10 ft	010-600-081
NovaWAVE Transfer Rack Stand	1	010-600-040
Mixing Cap for Microwave vessel	1	010-600-100
Venting Tool for NovaWAVE SA and MiniWAVE Safety Pressure Caps	1	010-600-070
Weighing Support for Quartz vessel	1	010-600-110
Weighing Support for Teflon® vessel	1	010-600-115
DigiFILTERs Evaluation Kit	1	N/A

Automate sample preparation through the use of *EasyPREP* Sample Handler. Details on page 56-57.

Quartz Fiber Ashing CRUCIBLES

Quartz Fiber Crucibles improve ashing times by dramatically increasing oxidation and reducing cooling times. The low-mass, porous crucibles permit air to circulate through the crucible increasing the rate of oxidation. Ashing disks are placed on top of the sample to reduce loss of sample due to airflow.

Features

Ideal for use in both microwave and conventional muffle furnaces

Cool from 1000 °C to ambient in seconds for easier handling



Description	Dimensions (mm)	Height (mm)	Quantity	Catalog No.
20 ml Ashing Crucible	44	13	100	010-070-101
50 ml Ashing Crucible	44	43	50	010-070-103
100 ml Ashing Crucible	61	40	16	010-070-104
Ashing Disk (for 20 & 50 ml Crucibles)	43	n/a	200	010-070-102
Ashing Disk (for 100 ml Crucibles)	60	n/a	100	010-070-106

