



# QWAVE 1000

*Microwave-Assisted Sample Digestion – Safe and Affordable*



## Introduction

Traditional open-beaker dissolution for sample preparation is an antiquated method susceptible to biases—primarily through contamination of the sample. However, with the advent of computer technology and ever-refined uses of microwave energy as a heat source, the time savings and sophistication level of sample preparation is approaching that of instrumental analysis. Our QWAVE 1000 offers an affordable and safe way to perform microwave digestion – incorporating the same oven and the same rugged and laboratory-tested vessel sets (UHP, VHP, or LVHP vessel types) as our more expensive and higher-end systems. If you need a laboratory-grade microwave system for the digestion of moderately demanding samples with pre-tried and tested methodologies that require timed power to be applied to your samples, then QWAVE 1000 is all you need. Typically, these kinds of digestions are processed with application of timed power only.

### **A few benefits**

QWAVE 1000 Closed-vessel microwave decomposition offers the following benefits:

- The environment in which the reaction takes place is clean, closed, and controlled
- The amount of acid is diminished to stoichiometric quantities of the reagents, reducing contamination to a minimum
- ppb, ppt level sensitivities
- Shorter reaction time and improved digestion due to higher temperatures (far above the normal boiling point of the reagents)
- No loss of volatile elements

## New rugged design

- Spring-loaded door latch provides a simple and effective safety shield
- Door safety interlocks
- PTFE-coated reinforced cavity
- Newly designed vessels with OPGuard™ Vessel Protection System
- User-friendly control panel with tactile membrane switches
- Better and brighter LED display
- Easily accessible electronics and serviceable modules

## Uncompromising safety features

At Questron, we pay utmost attention to the issues of safety, productivity, and product functionality. During the time of product definition and product development, our engineers and scientists constantly think of the end users and how they are likely to use the product. The end result of all this is an instrument that is easy to use and easy to maintain – an instrument that works hard for its owner.

An example of this design approach are our layered safety features. As a protection against unforeseen events, such as out-of-limit pressure buildup in sample vessels due to some unexpected sample reaction, our first line of defense is our extra strong and proven vessels. All our vessel sets are conservatively rated and can withstand short-time pressure spikes that are well above the normal working range. In parallel to this, any out-of-limit pressure buildup causes our OPGuard™ mechanism to come to rescue. It automatically causes the effected vessel to vent – safely and reliably. In such an event, all microwave power is stopped and a beeper sounds, warning the user to the extraordinary condition. A rugged and powerful exhaust system rapidly removes any purged acid fumes from the cavity to the exhaust duct. Finally, if all else fails, our next line of defense, a mechanically strong and conservatively specified oven body, safeguards individual safety and undue damage to nearby instruments. Its rugged frame and intelligent design provides uncompromising protection under the worst imaginable scenarios.

## Specifications

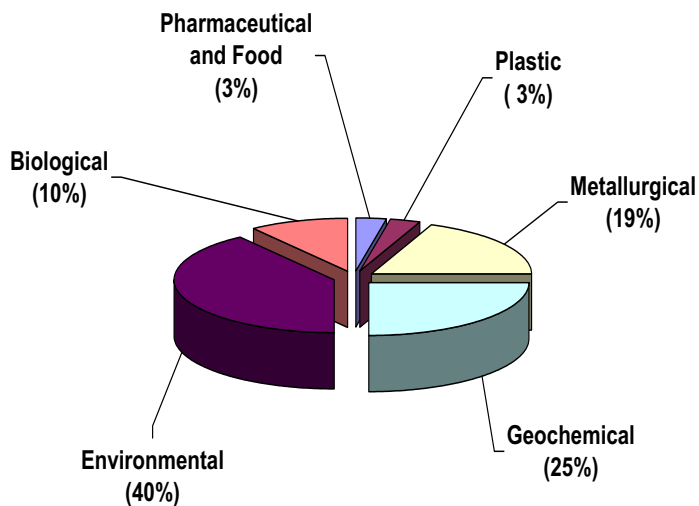
### Oven

Microwave power output	Up to 1200 Watts
Magnetron frequency	2450 MHz
Utilities	208 VAC, 60 Hz, 20 Amps 220 VAC, 50 Hz, 20 Amps
Exhaust	150 CFM
Display	High brightness LED
Dimensions (width x depth x height)	
<i>External</i>	58 x 61 x 64 cm (23 x 24 x 25.5 in.)
<i>Cavity</i>	39 x 34 x 30.5 cm (15 x 13.5 x 12 in.)
Weight	75 kg. (165 lbs.)

### Vessels Module

Supported vessels	UHP, VHP and LVHP
Maximum samples	10 (UHP & VHP) and 30 (LVHP)

## Usage by industry



## Some common applications

QWAVE 1000 features four power level settings and is the ideal choice for power vs. time methods. Some of the common applications that can be run on this system are:

Sample type	Size (grams)	Digestion time (hr:min)
Alpha Alumina	1.00	0:30
Boiler ash	0.60	0:30
Cement (Portland)	0.15	0:10
Cu concentrate	0.30	0:15
Fish tissue	1.20	0:25
Iron ore	0.50	0:20
Limestone	0.20	0:20
Paint chips	0.60	0:27
Pt, Rh on ceramic	0.25	0:20
Sediments	0.40	0:17
Soil	0.80	0:24
Steel	0.50	0:28
Waste water	25.0	0:20

Your local distributor:

## Questron Technologies Corp.

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