



8300 Series

Microwave Digestion

The 8300 Series of Microwave Digestion Systems are available with sample preparation of 12, 18, 40 or 50 samples each of up to 50ml for 8312/8318 models and up to 100ml for 8340/8350 models at one time.

A series of versatile Microwave Digestion Systems which include pre-programmed methods and up to 255 user defined analysis methods

8300 Series Microwave Digestion

PG Instruments – a leader in the development of first class scientific instruments – is pleased to introduce its 8300 Series of Microwave Digestion Systems. The 8300 Series offers a range of sample preparation including 12, 18, 40 or 50 samples

Introduction

As analysis techniques continue to improve and become more sensitive, an even greater emphasis is being placed on the accuracy of sample preparation that involves the risk of contamination.

Microwave digestion is now recognised as the most robust sample prep technique for a number of analytical instruments.

- ▶ Atomic Absorption Spectrometer
- ▶ ICP-OES
- ▶ ICP-MS
- ▶ Flame Photometry
- ▶ UV Visible Spectrophotometer
- ▶ Atomic Fluorescence Spectrometer
- ▶ XRF

Microwave digestion involves combining the sample matrix and acids in a pressurized container and elevating the solution past the boiling point of the acid which significantly accelerates the digestion. Given the high operating temperatures and pressures, microwave digestion can be applied to a wide range of samples in a number of common industries.

- | | | |
|------------------|------------------|-----------------|
| ▶ Pharmaceutical | ▶ Oil and Grease | ▶ Gas |
| ▶ Plastics | ▶ Petroleum | ▶ Agricultural |
| ▶ Polymer | ▶ Forensic | ▶ Environmental |
| ▶ Rubber | ▶ Research | ▶ Education |
| ▶ Food | ▶ Chemical | ▶ Cosmetics |

The 8300 Series Microwave Digestion system produces a fully uniform dissolved sample simply, quickly and safely



Pharmaceutical



Environmental



Agricultural

Benefits of Microwave Digestion Technique

- ▶ Reduces sample preparation time
- ▶ Avoids sample contamination
- ▶ No exposure of analyst to corrosive or acid fumes
- ▶ Reduced acid consumption
- ▶ Loss of volatile elements is prevented
- ▶ Simultaneous preparation of 12, 18, 40 or 50 samples
- ▶ Reproducible digestions
- ▶ Improved QA/QC
- ▶ Simplifies sample preparation



Main Features

Available Models

4 models are available in the the same instrument design

- ▶ 8312 - 12 Vessel
- ▶ 8318 - 18 Vessel
- ▶ 8340 - 40 Vessel
- ▶ 8350 - 50 Vessel

MicroWave Design

The microwave design gives an even distribution of the microwaves within its large chamber volume

The tank is made from high quality stainless steel with a teflon coating which eliminates erosion and improves the cooling process.

The superior magnetron design allows selectable powers upto 3000W and cuts leakage to <5mw/cm³.

Monitoring

Temperature and pressure is contactlessly monitored, for each individual vessel, during its programmable operation. Temperature monitoring is performed using an IR sensor and the programmable temperature can be programed upto 400 degrees C depending on the requirements.

Pressure monitoring is performed using optical fibres and the programmable pressure can be programed upto 60bar depending on the requirements.

Vessels

Each 50ml/100ml individual vessel comprises of 2 main parts, the TFM inner vessel for the sample and the PEAK outer protec. vessel. 100ml vessels are used in 12 or 18 sample models and 50ml vessels are used in 40 or 50 sample models.

Rotor

The rotor supports the assembled vessels. It rotates in one direction, 360 degrees continuous movement.

Display

The remote 8inch touch screen has a user friendly interface for easy operation.

Initialisation is carried out after switch on and automatic system diagnostics show any problems before operation. Administrator rights are incorporated for editing of user programs, instrument calibration and logon features. Upto 255 programs can be set up by the user and saved for future use.

8 pre-set programs are available for instant use.

- ▶ General Digestion
- ▶ Milk
- ▶ Milk Powder
- ▶ Herbs
- ▶ Medicine
- ▶ Meat
- ▶ Soil
- ▶ Water





Technical Specifications

Component	Specification			
Model	8312	8318	8340	8350
Vessels	12	18	40	50
Microwave Power(adjustable)	0 - 2000W	0 - 3000W	0 - 3000W	0 - 3000W
Temperature Control	All Vessels Controlled			
Temperature Monitoring	Contactless IR Sensor Monitoring			
Max Working Temperature	250°C			
Temperature Accuracy	± 0.1°C			
Temperature Range	50 -400°C			
Pressure Control	All Vessels Controlled			
Pressure Monitoring	Contactless Optical Fibre Monitoring			
Pressure Range	0 – 60 Bar			
Vessel Volume	100ml	100ml	50ml	50ml
Vessel Material	Inert TFM			
Outer Vessel Material	Composite PEEK			
Display	8 Inch Remote Screen			
Rotor	360° Continuous Rotation			
Chamber Volume	60L			
Microwave Frequency	2450MHz			
Leakage of Micro-wave	Less than 5mW/cm ²			
Power	AC 220V ± 10%, 16A, 50/60Hz			
Dimensions	640mm x 630mm 590mm			
Net Weight	70kg	75kg	78kg	88kg

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The highly qualified and long experienced team at PG Instruments Ltd are recognised experts in electrochemistry and relevant technology. They have been developing and manufacturing analytical instruments for science for over a decade and have a worldwide recognised reputation for excellence in their field.