

ultraWAVE RACK GUIDE



MILESTONE
H E L P I N G
C H E M I S T S

The ultraWAVE rack guide includes a wide variety of rack sizes, including 4, 5, 8, 15, 19, 22, 26 positions and combinations of different vials in the same rack. Vials are available in PTFE, quartz or disposable glass to match the specific needs of the laboratory. Choosing the optimal vial material depends on factors such as sample type, sample amount to be digested, acid chemistry, elements of interest and desired limit of quantification. The table below provides guidelines on choosing the vial size and material which will be best suited for your application.



VIALS MATERIAL	MATERIAL PROPERTIES AND FEATURES	BENEFITS
High purity PTFE	High purity material No inherent material contaminants Suitable for applications requiring HF	Optimal for trace element determination Suitable for any acid mixture Great for digestion of geological material and inorganic samples Low blanks
High purity Quartz	Easy to clean No inherent material contaminants (except for silicon) Low porosity	Great for trace metals analysis of food, pharmaceuticals and other organic samples Low memory effect High durability and long lifetime
Disposable Glass	Disposable Suitable for the analysis of all elements. Inherent material contaminants may include: B, Na, Mg, Al, K, Ca, which could prevent low detection capability	Inexpensive Great for routine analysis Suitable for the large majority of heavy metals No cleaning step Higher throughput

HIGH PURITY PTFE AND QUARTZ VIALS

TYPICAL APPLICATIONS



Agriculture



Biological



Environmental



Food & Feed



Geochemistry



Metals



Petrochemical



Pharmaceutical



Polymers



Research

DISPOSABLE GLASS VIALS

TYPICAL APPLICATIONS



Agriculture



Beverage



Environmental



Food & Feed



Officials



Petrochemical

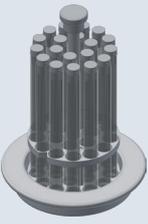
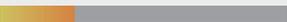
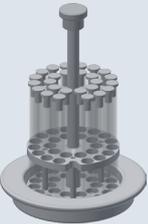
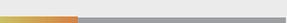
EFFICIENT AND COST-EFFECTIVE SAMPLE PREPARATION

Choosing the number of positions is influenced by the type of sample, sample amount and productivity required. The ultraWAVE racks provide unparalleled flexibility, as they easily accommodate both large sample masses and high productivity. The table below shows the available racks and provides guidelines for the typical applications and solutions for which they are used.



RACKS	TYPICAL WORKING CONDITIONS & SAMPLES	TYPICAL APPLICATIONS	BENEFITS
<p>4 POSITIONS</p>  <p>Glass PTFE/TFM Quartz</p>	<p>Suggested volume: 12 mL Sample amount: up to 3.5 g</p>  <p>Extra-large organic sample amount</p>  <p>Highly reactive sample</p>	 Metals  Research  Food & Feed	<ul style="list-style-type: none"> – Achieve instrument DL for trace element detection – Representative sample amount – Sample homogeneity – Long runs at high temperature – Lower running cost (consumables)
<p>5 POSITIONS</p>  <p>Glass PTFE/TFM Quartz</p>	<p>Suggested volume: 10 mL Sample amount: up to 3 g</p>  <p>Extra-large organic sample amount</p>  <p>Highly reactive sample</p>	 Metals  Research  Food & Feed	<ul style="list-style-type: none"> – Achieve instrument DL for trace elements detection – Representative sample amount – Sample homogeneity – Long runs at high temperature – Lower running cost (consumables)
<p>8 POSITIONS</p>  <p>Glass PTFE/TFM Quartz</p>	<p>Suggested volume: 8 mL Sample amount: up to 1.5 g</p>  <p>Large organic sample amount</p>  <p>Medium to Highly reactive sample</p>	 Metals  Research  Food & Feed	<ul style="list-style-type: none"> – Achieve instrument DL for trace elements detection – Representative sample amount – Sample homogeneity – Long runs at high temperature – Lower running cost (consumables)

FLEXIBILITY THAT MAKES THE DIFFERENCE

RACKS	TYPICAL WORKING CONDITIONS & SAMPLES	TYPICAL APPLICATIONS	BENEFITS
<p>15 POSITIONS</p>  <p>Glass PTFE/TFM Quartz</p>	<p>Suggested volume: 5 mL Sample amount: up to 1 g</p>  <p>Large organic sample amount</p>  <p>Medium to Highly reactive sample</p>	 Food & Feed  Environmental  Inorganics  Pharmaceutical  Petrochemical	<ul style="list-style-type: none"> – High productivity – Ease of use – Mixed samples – Lower consumables cost – Lower labor cost
<p>19 POSITIONS</p>  <p>Glass PTFE/TFM Quartz</p>	<p>Suggested volume: 4 mL Sample amount: up to 0.3 g</p>  <p>Medium sample amount</p>  <p>Low reactive sample</p>	 Clinical  Research  Food & Feed	<ul style="list-style-type: none"> – Ultratrace metals analysis – Low acid volume – Ease of use
<p>22 POSITIONS</p>  <p>Glass PTFE/TFM Quartz</p>	<p>Suggested volume: 3 mL Sample amount: up to 0.3 g</p>  <p>Medium sample amount</p>  <p>Low reactive sample</p>	 Clinical  Research  Food & Feed	<ul style="list-style-type: none"> – Ultratrace metals analysis – Low acid volume – Ease of use – Lower consumables cost – Lower labor cost
<p>26 POSITIONS</p>  <p>Glass</p>	<p>Suggested volume: 2 mL Sample amount: up to 0.1 g</p>  <p>Small sample amount</p>  <p>Low reactive sample</p>	 Clinical  Research  Food & Feed	<ul style="list-style-type: none"> – Ultratrace metals analysis – Low acid volume – Ease of use

ULTRAWAVE

THE GAME CHANGER

IN MICROWAVE SAMPLE PREP

RACKS	TYPICAL WORKING CONDITIONS & SAMPLES	APPLICATIONS	ADVANTAGES
<p>8 POSITION MIXED RACKS</p> <p>3 vials of the 5 pos rack 5 vials of the 15 pos rack</p>  <p>Glass PTFE/TFM Quartz</p>	<p>Suggested volume and sample amount as per the 5 and 15 position racks</p>  <p>Extra-large & Large organic sample amount</p>	 Food & Feed  Pharmaceutical  Research	<ul style="list-style-type: none"> – Mixed samples – Different sample amount – Ease of use
<p>18 POSITION MIXED RACKS</p> <p>6 vials of the 15 pos rack 12 vials of the 22 pos rack</p>  <p>Glass PTFE/TFM Quartz</p>	<p>Suggested volume and sample amount as per the 15 and 22 position racks</p>  <p>Large & Small sample amount</p>	 Clinical  Research  Food & Feed	<ul style="list-style-type: none"> – Mixed samples – Different sample amount – Ultratrace metals analysis – Ease of use – Low acid volumes

ABOUT THE ultraWAVE

The Milestone ultraWAVE isn't just an evolution; it's a revolution—changing how industrial and research laboratories around the world prep samples for analysis. Patented ultraWAVE Single Reaction Chamber (SRC) technology transcends traditional closed and open vessel digestion, offering significantly greater digestion capabilities for even the most difficult sample types.

High-performance stainless steel construction allows for higher pressures and temperatures, while disposable vessels eliminate the need to assemble, disassemble or clean between processing. Just as important, dissimilar samples can be processed simultaneously, saving time and money.



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Visit us at www.milestonesci.com or call 866.995.5100 to schedule an onsite demonstration.