



TOPEX Microwave Reaction System

Simpler process » Easier work



WHAT CAN WE DO?

PreeKem has been focused on the field of microwave technology for more than 15 years. The latest innovation, **TOPEX** represents the state of the art in closed vessel microwave digestion. Superior vessel design, combined with more precise temperature and pressure control provides comprehensive reaction control features and better digestion results.

Microwave digestion • Microwave extraction • Microwave synthesis

Preekem

Preekem has been dedicated to microwave chemistry and sample preparation for 15 years and has been a leading supplier of these two fields in China. WX-2000 microwave digestion system is the first unit with dual control of temperature and pressure in China market. Since its launch in 2001, Preekem has developed over 20 new models including microwave digestion, microwave synthesis and automated solid phase extraction.

Preekem has the top R&D team, skilled manufacturing team, professional sales team and dedicated service team. Our products have been exported to countries and regions like U.S., Japan, Italy, Russia, India, Korea, Malaysia, Turkey, Pakistan, Australia and etc.

With consciousness of crisis and eagerness to innovate, Preekem aims to build one of world's top instrument brands with international advanced technology.

New Design
Outstanding industrial design

New Technology
Microwave focus on sample area and high effective microwave heating

New Window
More comfortable feelings of view and operation

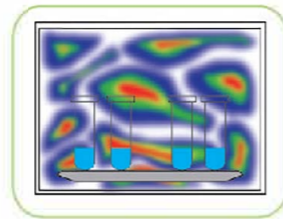
New Control
Prolonged use time and stable working

New Software
More intelligent handling and easy-to-use

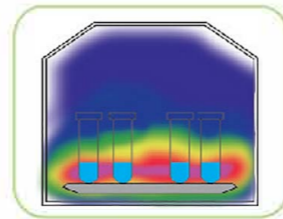
INNOVATION

Initiative directional and focusing microwave energy

- Unique microwave top reflection technique
- Uniform field density focus on samples
- High efficiency microwave radiation



Microwave in common cavity



Microwave in TOPEX cavity

INNOVATION

Flexible and Extendable Rotors

- Four difficult rotors delivers best digestion - whatever the sample type
- Auto venting-reseal design for high throughput rotor, ensure excellent trace analysis results

INNOVATION

Free-touch and real-time image technique

- Large color touchscreen for convenient operation
- Remote observation of vessels and sensors



GT-240



KJ-160



KJ-100



TOPEX Microwave reaction system



GT-400

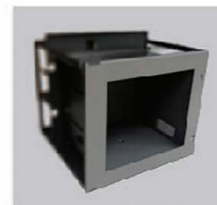


Quality lies
in the details!

1

Cavity

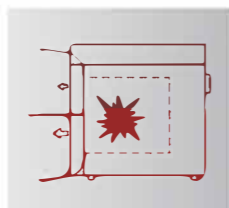
- Industrial-quality components made of 316L stainless steel and built by seamless laser welding
- Multi-layer Dupont PFA coating efficiently protects cavity away from corrosion
- 56L large cavity provide large batch of vessels (up to 40 vessels)
- Maximum withstanding temperature: 350°C



2

Microwave source

- Microwave output via two staggered magnetron and special waveguide design by PreeKem
- Uniform and high efficiency microwave heating focus on sample area



3

Door

- One-touch Key for opening and closing door
- Active door lock: Door opens only after a run has finished successfully
- Self-sealing action in case of an uncontrolled overpressure release



4

Closed-vessel design

- Inner vessel made of TFM provide better anti-penetration performance compared with PTFE
- Double pressure-release protection design: safety membrane releasing pressure and sealing cover breaking
- High strength frame-type structure design, withstand high temperature and high pressure



5

Auto-Venting vessel design

- High-purity TFM liner and fiber-reinforced PEEK pressure vessel ensure the reaction safety
- Tool-free handling of rotors, vessels and sensors
- Original venting design offers precise pressure control



Safety comes from scientific design and strict quality control

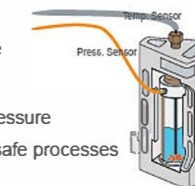
TOPEX Perfect integration of technology, wisdom and manufacture



6

Dual reaction control

- Immersing PT sensor allows accurate temperature measurements inside the solution
- High-precision high temperature melt pressure sensor measures the pressure in real time
- This precise control of the temperature and pressure is essential for reproducible results and ensures safe processes every time



7

Full vessel real-time IR sensor

- Dual circle bottom temperature detection and full vessel continuous scanning technology
- Auto circle detection selection based on the real time temperature, assuring the accurate and reliable temperature measurement



8

Straightforward software solutions

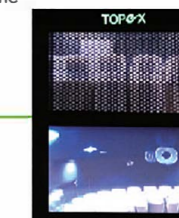
- The large and high-resolution touchscreen provides a convenient, built-in interface
- Simple Method Programming: A comprehensive library of methods gives
- Ready-to-use applications for a wide range of samples
- Easily monitor an active run from the graphical output of the touchscreen
- Watch detailed training videos right on the touchscreen
- Running data can be saved, reviewed and exported



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Safety Viewer

- Stable stainless steel door with both window and high definition camera
- It enables observation of the entire run in real time



10

High efficiency cooling unit

- Strong anti-corrosion exhaust unit provides effective heat transfer and cooling of vessels within minutes after decomposition
- No handling of hot pressurized vessels and increased lifetime of key components

Applications



Safety design

Seamless laser welding



Thickness of 316L stainless steel >3mm



Triple safety design of digestion vessel



Initiative safety features

- Temperature measurement and control system
- Pressure measurement and control system
- Safety-view monitor system
- Additional assist sensors

Passive safety features

- Safety membrane venting for over pressure(graph1)
- Long skirt seal venting for over pressure (graph2)
- Vertical pressure-release design (graph3)
- Seamless laser welding cavity made by 316L stainless steel
- Integrated multi-layer stainless steel door ensures the highest safety
- Overpressure release and resealing action

Closed acid digestion vessel: High performance

■ Rotor KJ-100 Super High Pressure Closed Vessel

Maximum throughput is 10 vessels



■ Rotor KJ-160 High Pressure Closed Vessel

Maximum throughput is 15 vessels



■ Rotor GT-240 Smart Auto-venting Vessel

Middle-high pressure type

Maximum throughput is 16 vessels



■ Rotor GT-400 High Throughput Vessel

High throughput with maximum 40 vessels



	KJ-100 Rotor	KJ-160 Rotor	GT-240 Rotor	GT-400 Rotor
Number of vessels	10	15	16	40
Liner material	TFM	TFM	TFM	TFM
Pressure jacket	PEEK	PEEK	PEEK	PEEK
Volume	100mL	100mL	100mL	60mL
Maximum operation pressure	900psi	750psi	525psi	300psi
Maximum withstanding pressure	2200psi	1750psi	1750psi	1500psi
Maximum operation temperature	260°C	250°C	240°C	200°C
Maximum withstanding temperature	310°C	310°C	310°C	310°C

Specifications

Touch Screen	7" HD LCD screen
Microwave Cavity	Industrial special designed microwave resonant cavity
Material of Cavity	316L Stainless steel
AC Power Input	220-240v/50HZ,15A
Power Consumption	3200W
Maximum Microwave Power Output	1800W
Microwave Frequency	2450MHz
Microwave Emission Mode	Non-pulse continuous microwave output
Microwave Control Mode	High frequency closed-loop feedback (PID) control
Volume of Resonant Cavity	56L
Rotors	KJ-100 Digestion Vessel KJ-160 Digestion Vessel GT-240 Digestion Vessel GT-400 Digestion Vessel
Pressure system	Pressure measurement range: 0-1500psi Pressure measurement precision: ± 0.1 bar
Temperature system	Temperature measurement range: 0-300°C Temperature measurement precision: ± 0.1 °C Temperature control stability: ± 1 °C
Exhaust system	Anti-corrosion converting-frequency centrifugal blower Maximum air-flow capacity is 5 m ³ /min
Ambient Temperature	0-40°C
Air Humidity	15-80%RH
Dimensions (W x D x H)	540mm× 640mm× 660mm
Weight	66Kg

Service and Technical support

All Preekem products are backed by our experienced applications support team and service department. Specialists from Preekem are at your service. Quick and efficient service reduces downtimes to a minimum

PreeKem



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