



Questron

Technologies Corp.

Chemistry – With Precision...

**World class solutions for Automated Sample Prep,
Microwave Digestion/ Ashing, Liquid Handling,
Lab Scrubbers, Accessories & Consumables**



Toll Free: 1.844.363.1223

www.Qtechcorp.com





Automated Sample Prep Workstations & Microwave Digestion Solutions

**Mining Industry | Soil Testing |
Agriculture, Tobacco, Cannabis Industry | Food Industry
Stack Pollution Testing | Water Pollution Testing
Cosmetics | Pharmaceuticals & Nutraceuticals | Environmental**



The first step in accurate metal analyses is bringing diverse samples into a mineralized state by applying precise levels of heat and reagents.

Questron Technologies Corp has dedicated twenty years in finding solutions to this complex process of digestion, sample preparation and liquid handling to ensure highest accuracy with least contamination.

Our innovatively engineered products also endure the hostile acid and heat environment to offer value for money—for years!

We are proud to present our latest sample preparation products.

Should you need customised solutions, just give us a call!

QBlock Digestion System



Wired / Wireless Heating Blocks for Open Vessel Digestion

Low Temperature (Up to 230 °C)	High Temperature (Up to 400 °C)
Max. Dimensions 33 x 30 x15 cm, 13.1 x 11.5 x 5.9 in (W x D x H)	
Acid Resistant PTFE coated Graphite Block	Acid Resistant Anodized Aluminum Block
Enclosure Material Welded HDPE for longevity	Enclosure Material PTFE Coated Stainless Steel
Power 120/ 240 V, Up to 1800W	Power 120/ 240 V, Up to 1800W
Standard Matrices <ul style="list-style-type: none"> • Well ID 16 - 48 mm. • Well Depth 48 or 65 mm. • For 15, 25, 50, 100 ml vials. • 20 (5x4) positions. • 42 (6x7) positions. • 56 (7x8) positions. • 72 (9x8) positions. 	Standard Matrices <ul style="list-style-type: none"> • Well ID 16 - 48 mm. • Well Depth 55 mm. • For 15, 25, 50, 100 ml vials. • 20 (5x4) positions. • 42 (6x7) positions.
Overheat prevention safety feature	Overheat prevention safety feature

Complimentary:
One Each Sample Tray and Holder

Features Include:

- Suitable for Kjeldahl digestion
- Accuracy +/- 1% of set temperature
- Less footprint in fume hood operation

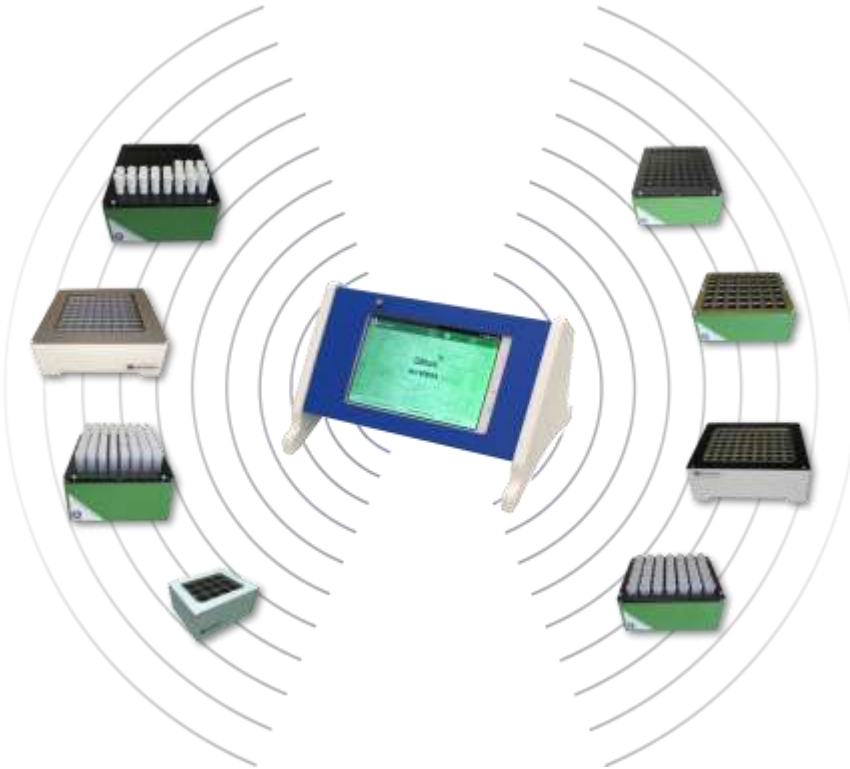
Customised QBlocks

Do you have specific requirements?

- Flat or rounded vials
- Deeper or shallower well depth
- Matrix with any number of vials

Questron can design and manufacture customized blocks, as you like!

QBlock Wireless Digestion System



- Bluetooth control for up to 8 digestion blocks
- Compatible with existing digestion blocks
- Four levels of multi-step recipe profiles
- Large color touch screen
- Saves valuable laboratory space
- Remote control from up to 50 meters
- Multiple recipes and heating profiles
- Removes electronics from acid environment
- PC connectivity for digestion data archiving



QPlate Digestion System



QPLATES

- Each QPlate has a customised Electronics Interface that is placed outside the fume hood
- Receives digestion method data from the Wireless Controller and controls power to the heating block
- Constructed from non-metallic material, this Interface has high acid resistance and includes external flanges for surface mounting

- With a large flatbed heating surface, QPlate Wireless Digestion system can be effective in mining, pollution control, agriculture and many other industries
- The system comprises up to 4 QPlates (each with an Electronics Interface), controlled by one Wireless Android™ based touchscreen Controller. Each QPlate has its own temperature profile
- The customised software is pre-loaded and integrated with each QPlate — providing the user a plug-and-play experience in a task that requires precise control, automation, data archiving and retrieval
- Wireless control enhances fume hood efficiency, increases user comfort by enabling remote operation and minimises wire clutter
- Storage for unlimited digestion programs, each with up to four temperature ramp/ hold steps



CONTROLLER



INTERFACE

QPlates are available in sizes from a handy 10 x 12inches to jumbo 36 x 18inches

Just let us know your requirement, and we can design your customised QPlate.

QPlate Wireless Configurations

<p>QPlate 12 x 12 Teflon coated Graphite QPlate for up to 230 °C</p>	<p>240 VAC Without Interface Power rating 1200 W Uses various glass vials/ vessels with flat bottom Specific QPlate specifications available on request.</p>
<p>QPlate 12 x 12 Anodised Aluminium QPlate for up to 400 °C operation</p>	<p>240 VAC Without Interface, Power rating 2000 W Uses various glass vials/ vessels with flat bottom Specific QPlate specifications available on request.</p>
<p>QPlate 12 x 18</p>	<p>240 VAC Without Interface Anodised Aluminium QPlate for up to 400°C operation Power rating 3000W Uses various glass vials/ vessels with flat bottom Specific QPlate specifications available on request.</p>
<p>QPlate 12 x 24</p>	<p>240 VAC Without Interface: Anodised Aluminium QPlate for up to 400°C operation Power rating 4000W Uses various glass vials/ vessels with flat bottom Specific QPlate specifications available on request.</p>

Vulcan Series

Automated Digestion and Work-Up System

All-Plastic, Robotic and Advanced Workstation

Increasing High-Throughput in Corrosive Environments



Vulcan-Peristaltic Pump Standard
(Also available in Duo series with two QBlocks)

**Ultra-Pure, Consistent,
Automated Sample Preparation**

**Enhancing Safety & Efficiency
in Laboratories**

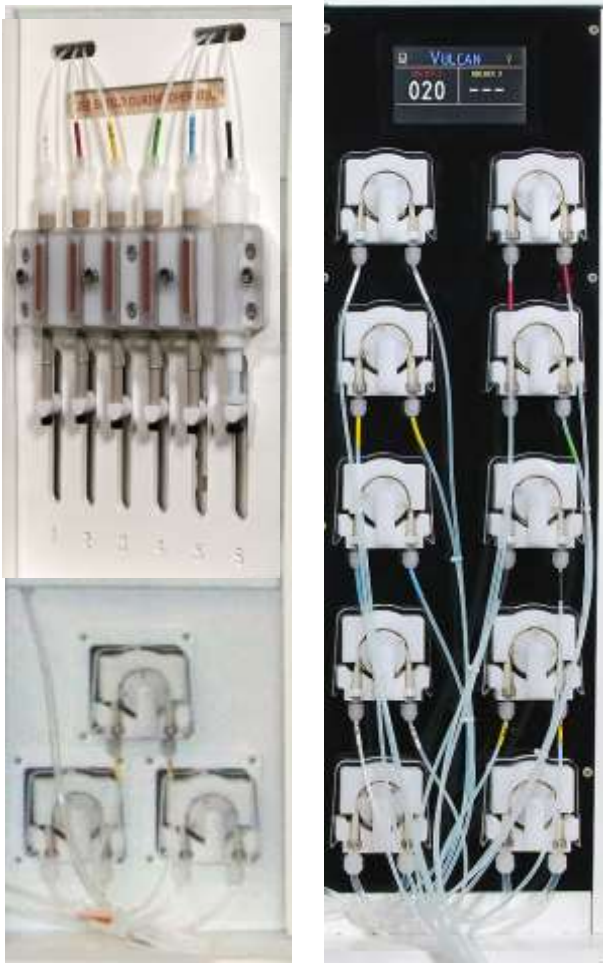
Vulcan Syringe Pump Series



Vulcan-S Standard



Vulcan-S Duo



Glass & PTFE Syringes Peristaltic Pumps

- Option of Syringe or Peristaltic pump based reagent delivery system
- Syringes and Pumps available for all liquids including HF, HClO₄, H₂O₂, KMNO₄ and H₂SO₄
- Automated Reagent Management
- Flow rate up to 1 ml/sec

Independent reagent lines reduce priming operations, increase dispensing speed and minimize contamination



Option of PTFE syringes for higher accuracy ultra-pure dispensing

PTFE Coated Graphite Digestion Blocks



Pneumatically driven tray lift moves samples in and out of the digestion block. This provides precise, automated heating and cooling of the samples.



- Choice of digestion block, standard size (50 mL, 42 samples) and large size (50 mL, 72 samples)

- Digest samples up to 230°C
- Temperature homogeneity of ±1°C
- Anodised Aluminum blocks available for higher temperatures
- Easy to add alternate blocks for other sample volumes

Digestion blocks accommodate 15, 25, 50 and 100 mL vials





Dilute Up To Mark

Ultrasonic, non-contact sensor reads the initial sample volume and dilutes the sample to the users specified volume



Stirring Samples

Samples are homogenized by a stream of bubbles which force the sample to mix with the lighter diluent. The probe also moves laterally to help speed up this process



Transfer

After the digestion is complete, the system can transfer an aliquot of the digestate to an autosampler rack



Cleaning Probes

The sample probes are washed in a dual chamber wash station to eliminate sample-to-sample cross contamination. The diluent flows within the well to clean the sample loop



User Interface

The Vulcan software provides complete control and flexibility over the automation. The ease of method development allows users with unique samples and processes to customize the system for their applications



ULPA Filter Arrangement

- Built-in fume hood saves valuable lab space
- Optional sample transfer capability
- ULPA/HEPA filter maintain a clean work area
- Compatible for use with Perchloric acid
- Compatible with LIMS, if protocols are shared
- Compatible with robots for vial handling
- Option of built-in industrial computer
- Accessories include: acid resistant exhaust blower, fume scrubber and reagent storage cabinet
- Customized vials and reagent dispensing available

	QBlocks	Syringe Pump	Peristaltic Pump
Duo-S	2	6	1
Duo-P	2	-	8
Std-S	1	6	1
Std-P	1	-	8

Sample Transfer & Dilution feature is not available with large size QBlock



Vulcan-P Standard

Computer : Windows® 10 operating system

with USB3 port & 4 GB RAM

Utilities : Standard - 120/ 240VAC,

50/ 60 Hz, 15A

Duo - 240VAC, 50/ 60 Hz, 15A

Exhaust Flow : 130 - 150 CFM, 1100 - 1200 feet/ min)

Air Supply : 60-65psi air at 1-2 LPM
¼" connection

Operating ambient temperature : 5 - 40°C

Operating ambient Humidity : 10% - 80%

Dispensing Accuracy : Syringe : ±0.05 mL

Peristaltic : ±0.2 mL

Dispensing Flow : Syringe : ±0.5 mL/sec

Peristaltic: ±0.5 -1 mL/sec

Make Up Volume Accuracy : ±0.15 mL in
50 ml vial

Temperature Accuracy : ±1°C with air flow

	Vulcan Duo	Vulcan Standard
Dimensions (W x D x H)	48 X 31 X 32 in	38 X 31 X 32 in
Weight	114 kg (250 lb)	95 kg (210 lb)
Shipping Dimensions	55 X 34 X 39 in	47 X 34 X 40 in
Shipping Weight	380 lbs	310 lbs

Vulcan Accessories



Scrubber



Reagent Cabinet



Exhaust Blower



In-built Comput-



Sample Carrying Trays and Racks

Nitron

High Temperature Automated Block Digestion

The Nitron High-Temperature Automated Digestion and Dispensing system is designed for routine and customizable methods that require heating up to 400 °C. It is ideal for automating applications involving acids like sulfuric and phosphoric acid.

Nitron has a unique way of handling Sulphuric acid fumes to avoid any condensation on digestion area.

The six independent reagent lines reduce priming operations, increase dispensing speed and minimize cross contamination.

The all-plastic fume hood provides a safe environment by reducing user contact with harmful acid fumes and hot samples.



Common Applications:

Nitron will automatically:

- Heat samples up to 400°C
- Cool samples to ambient
- Dispense acids and reagents
- Dilute samples to defined volume

- Total Kjeldahl Nitrogen
- Total Phosphorus
- Feed
- Grains
- Plant tissues
- C.O.D.
- Plastics
- Ores
- Food
- Oils



Nitron software provides complete control and flexibility over the automation. The ease of method development allows users with unique samples and processes to customize the system for their applications.

Standard QBlocks for Nitron

30 Positions	QBlock, capable of heating to 400°C; 6x5 matrix of anodized aluminum, sample tray and tray holder
42 Positions	QBlock, capable of heating to 400°C; 7x6 matrix of anodized aluminum, sample carrying tray and tray holder

Standard Digestion Vials

84-100-333	50 mL, Glass, Up to 650°C
84-100-356	100 mL Glass, Up to 650°C
84-100-303	100 mL, Teflon, Up to 230°C
84-100-291	150 mL, Glass, Up to 650°C
84-100-341	250 mL, Glass, Up to 650°C



Computer : Windows® 10 to XP™ , one USB3 port & 4 GB RAM

Utilities : 240VAC, 50/ 60 Hz, 12A, 60-65psi air @ 1-2 LPM

Exhaust Flow : 130 - 150 CFM, 1100-1200 feet/ min

Operating ambient temperature : 5 - 40°C

Operating ambient Humidity : 10% - 80%

Dispensing Accuracy : Peristaltic pump : ±0.2 mL, Syringes : ±0.05 mL

Dispensing Flow : Peristaltic pump : 0.5 - 1 mL/ sec, Syringes : 0.5 mL/ sec

Make Up Volume Accuracy : ±0.15 mL in 50 mL vial

Temperature Accuracy : ±5% with ventilation

Dimensions (W x D x H)	89 X 64 X 77 cm (35 X 25 X 30 in.)
Weight	70 kg (153 lb)
Shipping Dimensions	97 X 87X 102 cm (38 X 34 X 40 in.)
Shipping Weight	114 kg (252 lb)

Customisation

Do you have unique vial and temperature requirements?

Questron will design and manufacture customized block digestion systems for your applications.

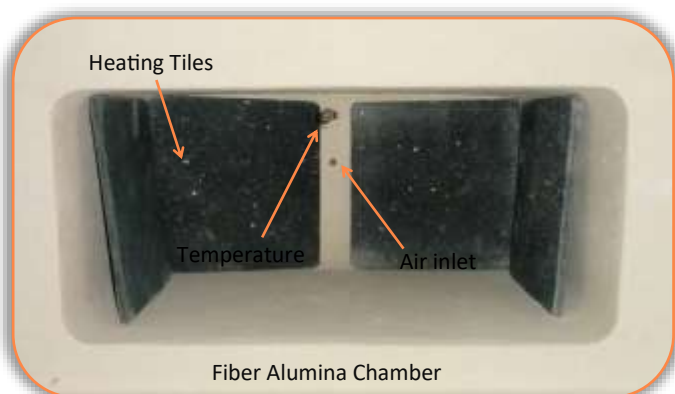
QAsh 1800

Efficient Ashing of Carbon Rich Samples Using Controlled Air Flow

- Wireless Controller with Java app
- Fibreglass furnace
- LED Bar temperature display
- Attains 1200 °C in 25 minutes
- 1800 Watts microwave energy
- 9 - 50 ml crucibles in a batch



Microwave ashing is an innovative analytical sample preparation method that replaces traditional ashing technique using a resistively heated muffle furnace. While maintaining the basic tried and tested principles of ashing, replacing the resistive heating with microwave heating offers distinct advantages, chief among them being speed, reduced energy cost, high sample throughput, repeatability of results, cleaner working environment and increased operator safety.



Corrosion proof, external exhaust blower efficiently removes fumes and shortens cooling time

QLab Pro Microwave Digestion System



Configurations

- Closed Vessel Time-To-Temperature

Model QL-100-101 (50Hz) & QL-100-102 (60Hz)

- Closed Vessel Time-To-Power

Model QL-100-103 (50Hz) & QL-100-104 (60Hz)

- Open Vessel Time-To-Power,

Model QL-100-105 (50Hz) & QL-100-106 (60Hz)



LVHT Vessel



eVHP Vessel

- Ideal for Open as well as Closed Vessel Digestion
- Built-in temperature and pressure monitoring of each digestion vessel
- User independent safety features
- Controlled release of over pressure to avoid cross-contamination
- Rotating antenna and 360° carousel rotation ensuring uniform vessel heating
- Corrosion-proof PTFE-coated reinforced cavity
- Controllable microwave power for precise temperature control
- 150 CFM exhaust for fume removal and vessel cooling
- Spring-loaded door latches for enhanced safety
- Data handling capability including saving, printing and re-runs of saved methods



Rugged, Acid Resistant Design

QLab Pro : Closed Digestion Vessels



eVHP Vessel Set



LVHT Vessel Set

- Vessel for high throughput and moderate temperature requirements
- Possibility to digest 30 samples in single run
- Temperature monitoring for each vessel
- Vessels are individually pressure controlled and equipped with our unique resealing over-pressure guard (OPGuard™) vessel protection system
- Ideal solution for labs running large number of samples in every batch
- Option of sensor vessels for in-situ temperature and pressure measurements
- Accurate temperature sensing (± 0.1 °C sensitivity)
- Ease of loading carousel vessel by vessel inside the system's cavity
- Convenient manual release of residual pressure after digestion
- Vessel Handling Station prepares vessel correctly every time
- Automatic protection against unusual heating of vessels
- Optimally designed carousel ensures uniform heating of all samples
- Temperature control for as low as 8 ml possible

QWave - Microwave Digestion System



- 208-240VAC, 50/ 60Hz, 15A, Fully CSA, and UL compliant oven
- Dual Magnetrons for high power digestions
- Wireless control by Android based tablet computer QL-101-501
- Powerful and friendly user interface with touch screen, 7" display
- Preloaded EPA 3015, 3051 3052 and other digestion methods
- Unlimited digestion recipes can be developed and stored
- Software allows users to edit, save and run methods. Printouts are also possible
- Ports to transfer methods or update software with data storage of about 6 GB
- Temperature and pressure monitoring and real-time graphical display of digestion parameters of each vessel
- IR temperature sensing for remote/ non-invasive temperature measurement of all vessels
- Facility of additional in-situ pressure sensing vessel and/ or temperature sensing vessel. This is not necessary as every vessel is monitored with a non-contact sensor

- Capable of identifying vessel in case of over pressure
- Microwave power available in small increments
- Rotating antenna and 360° carousel rotation ensuring uniform microwave heating
- Ease of loading carousel vessel by vessel within the system
- Real-time graphical display for digestion parameters
- High efficiency 150 CFM, 2-speed blower built-in for fume exhaust and post-digestion vessel cooling inside the oven
- Corrosion resistant PTFE coated reinforced stainless-steel cavity and acid resistant polymer shell for long life
- Cavity volume 56 litres 40 X 40 X 36 (h x d x w)
- System cavity has a capability of sensing device to automatically turn off the system if a vessel event occurs
- Spring-loaded door that automatically relieves pressure in the case of a vessel event to provide additional safety
- Up to 1800 Watts power output
- 2450 MHz magnetron frequency
- Magnetron power cut-off in case of over limit pressure release
- Full absorption of reflected microwave energy at 100% power
- Auto Shut off function for system shut down if full power is applied over a specified time to prevent runaway reaction
- Compatible with Questron 18-eVHP or 40-LVHT vessel sets
- Option of QBlock pre- and post-digestion treatment of samples in microwave digestion vessel liner itself to minimise contamination, concentrate samples, boric acid treatment for excess HF acid or evaporate excess acids
- Requires 60-65psi air at 1-2 litres per minute with ¼" pneumatic connection for plastic pipe



**Vessel Loading
Station**



LVHT vessel



eVHP vessel

Accessory Products

Laboratory Grade, Compact and Efficient Acid fumes Scrubber

Even if you have a roof-top scrubber, the acid fumes are better handled at the point of source, before they corrode and otherwise damage the conduits and other hardware to the roof-top. Questron's uniquely designed fume Scrubber was developed with our Vulcan product in mind, but it would find application at any place where concentrated and hot fumes are generated, such as in fume hoods. More than 90% efficiency is achieved for most exhaust constituents, such as HNO₃ and HF acids. The unit requires a source of clean water at 1 liter per minute. Optionally available acid resistant exhaust blower that provides exhaust flow through the scrubber at 1000 to 1400 ft per minute.



Laboratory Grade Scrubber

(18.5 " diameter X 34 " high)

Questron Portable Fume Enclosure

Questron Portable Fume Hood is an ideal choice in a laboratory application where a portable, table top, acid resistant enclosed space with a fume exhaust blower is required. It presents a viable alternative where permanently fixed fume hoods are too big and too expensive.

Two sizes are available. The QS-401-101 was ideally sized to accommodate one large size or standard size Questron digestion block, It has provision to continuously remove fumes from its inner space with a rugged acid resistant exhaust. The larger, QS-401-201 can accommodate two large size Questron digestion blocks.



Storage & Digestion Sample tubes

Questron makes a wide variety of tubes of various constructions. Primarily, they are used in our Vulcan and QBlock instruments, but they can also find home in any application that requires sample storage, sample analysis, etc. Below is a small sampling of our standard products in this category.

Accessory Products

Reagent Bottle Storage Container

Designed with the Vulcan in mind, Questron Reagent Bottle Storage Container is ideal for safely storing glass or plastic bottles. The Container can sit beside or underneath the Workstation. The unit can accommodate six of 2.5 liter bottles of standard reagent or concentrated acid bottles. Separate compartments ensure that liquids posing danger or fuming or mixing can be separated. The unit is acid resistant and designed to catch accidental acid spillage. Gas tight entry ports and active removal of in-box fumes is possible via an exhaust line connected to lab exhaust system.

As additional feature enables use of commercial racks for Installation in modular furniture.



Outer Dimensions

(W x D x H): 22.5 x 15 x 15 in.

Laboratory Glassware



- We use low expansion Borosilicate 3.3 as per ASTM E-438 Type –I
- Borosilicate 3.3 is highly resistant to almost all Chemicals, salt solutions and other organic solvents
- The labware are highly heat resistant, high resistance to thermal shock & high mechanical strength
- Thermal expansion between 0-300/°C is $33 \times 10^{-7}/^{\circ}\text{C}$ and thermal conductivity $0.0027 \text{ cal/cm}^3/^{\circ}\text{C}/\text{sec}$
- Borosilicate 3.3 can handle up to 240 degree Celsius for continuous usage under general laboratory conditions , whereas it can withstanding temperature around 400-450 degree Celsius for short-term usage



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