ISO 9001 CERTIFIED

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**

Questron
Technologies Corp.

Questron Promise

At Questron Technologies Corp., we strive to be a world class developer, manufacturer, and marketer of scientific products and services. Using all our resources and knowledge base in mechatronics, material science, and chemistry, our primary goal is to present our clients worldwide with the very best sample prep products and tools modern technology can provide. The need to measure is a necessary part for any scientific enquiry. It is our passion to be a player in this enquiry - to provide top-notch products and services to the scientific community. From conception to manufacture to final deliveries, Questron provides time saving, safe, reliable products, that are easy to learn and operate. We are scientists serving scientists – you talk, we listen.

We take pride in our promise to work in accordance with our core values.

- **Innovation**: We challenge the status quo to drive continuous improvement
- **Teamwork**: We work together to achieve our goals.
- **Accountability**: We hold each other to a standard of excellence.
- **Dedication**: We are committed to giving our very best effort every day.
- **Integrity**: We promise to do the right thing even when it is difficult.
- **Respect**: We treat others the way we expect to be treated.

Questron
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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!

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QPlate Digestion System

QPLATES

- With a large flatbed heating surface, QPlate Digestion system can be effective in mining, pollution control, agriculture and many other industries
- The system comprises of a QPlate with a Contoller box that has a keypad and LCD screen enabling local programming. In addition, if desired, up to 4 QPlates (each with their own controller), can be integrated into one system through our Wireless Android™ based touchscreen Controller that allows remote, wireless control of each integrated QPlate.
- Whether operating from wireless controller or through its local controller, the user interface provides the user a plug-and-play experience in a task that requires precise control, automation, data archiving and retrieval
- If so equipped, Wireless control enhances fume hood efficiency, increases user comfort by enabling remote operation and minimizes wire clutter. It also enables unlimited storage of digestion programs, whether provides by Questron or user made.

Wireless Controller

- Each QPlate is powered through a customized Electronics Controller with a keypad and LCD screen for data entry/viewing.
- Like our QBlock hot blocks, QPlate can also work with our wireless, Android based Controller,
- Constructed from non-metallic material, and hermetically sealed, the controller is acid resistance and includes external flanges for surface mounting

QPlate Controller box

QPlates are available in sizes from a handy 10 x 12inches to jumbo 36 x18inches

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

Questron Technologies Corp.

QPlate Wireless Configurations

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

Questron Technologies Corp.

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 • Well ID 16 - 48 mm. • Well Depth 48 or 75 mm. • For 15, 25, 50, 100 ml vials. • 20 (5x4) positions. • 42 (6x7) positions. • 56 (7x8) positions. • 72 (9x8) positions.	**Standard Matrices** • 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 Kejldahl 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!

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QBlock Wireless Digestion System

Safe & Secure multi-block Control by QBlock BlueTooth Controller

- Bluetooth control for up to 8 digestion blocks
- Compatible with all Questron digestion blocks
- Four levels of multi-step recipe profiles
- Large colour 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
- Increases laboratory safety and efficiency

Real-time display of temperature and recipe

Single Block Wired System

- A single QBlock controlled with Interface Box with Keypad
- Uses 100-240 VAC, 50 / 60 Hz, up to 15 A
- Programmable temperature control from room to 250 °C
- Operates on dual thermocouple probes concept
- Same Precise, programmable, multi-step operation as our BlueTooth Controller
- All HDPE construction for high acid resistance
- Compact footprint

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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

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Questron Technologies Corp.

Vulcan Syringe Pump Series

Vulcan-S Standard

Vulcan-S Duo

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DISPENSING

Glass & PTFE Syringes

Peristaltic Pumps

- Option of Syringe or Peristaltic pump based reagent delivery system
- Syringes and Pumps available for all liquids including HF, $HClO_4$, H_2O_2, $KMNO_4$ and H_2SO_4
- 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

HEATING

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

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WORKUP

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

SOFTWARE

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

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SPECIALS

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

MODEL

	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

SPECIFICS

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

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QPrep Automated Dilution/ Liquid Transfer System

QPrep is the answer for an integrated solution to the demand for precise dilutions, transfers, dispensing and other related liquid handling functions in analytical labs for sample prep work. QPrep is built from ground up to provide methodology-driven capability from a PC to handle precise reagent delivery for large number of samples in multiple racks. The QPrep is able to spike samples with internal standards, perform multiple dilutions, add reagents consistently, as well as preparing calibration and QC standards. Unit supplied with HEPA-filtered enclosure as shown below.

Key Features

- PC Windows10 driven application software.
- Built-in peristaltic pump and two syringes for continuous flow dispensing
- Dispensing, Dilutions and Transfers from customer specified tubes.
- Dispensing reagent using both Syringe and Peristaltic pump.
- 0.01 ml accuracy in handling reagents
- Up to 100 ml / min reagent flow using syringes
- 0.5 to 2 ml/sec reagent flow rate for peristaltic pump
- All-Plastic design providing zero contamination from surroundings.
- Easily configurable to accept different trays and racks
- Handles HF and other concentrated acid solutions
- Capable of multiple dilutions
- Peristaltic pump driven dual chamber wash station
- Teflon®-coated rigid graphite probe for accuracy and ease of cleaning
- System enclosed in a HEPA filtered chamber

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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.

Nitron will automatically:

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

Common Applications:

- 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.

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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.

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QLab Pro

Microwave Digestion System

- 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

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

Rugged, Acid Resistant Design

Questron Technologies Corp.

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 one vessel at a time 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 sample + reagent volumes as low as 8 ml possible

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QWave - Microwave Digestion System

- 208-240VAC, 50/ 60Hz, 15A, Fully CSA, and UL compliant oven
- Dual Magnetrons for high power digestions
- Full system control through portable Android based computer QL-101-501
- Powerful and friendly user interface using touch screen 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
- USB Ports to transfer/print methods and other files
- 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

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- Capable of uniquely identifying any over-pressure vessel
- Microwave power available in small increments
- Rotating antenna and 360° carousel rotation ensuring uniform microwave heating
- Ease of loading carousel one vessel at a time 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)
- Built-in software capability of sensing abnormal operating situations, such as a leaking vessel
- Spring-loaded door that automatically relieves pressure in the case of a vessel event to provide additional safety
- Up to 1800 Watts/2450 MHz power output
- Built-in safety feature to cuf-off microwave power in case of over limit pressure release
- 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

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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

Questron Technologies Corp.

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

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.

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Accessory Products

Reagent Bottle Storage Container

Designed with the Vulcan in mind, Questron Reagent Bottle Storage Contained 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.

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 analsis, etc. Below is a small sampling of our standard products in this category.

	Polypropylene	Glass	Teflon
50 ml	Yes	Yes	Yes
100 ml	Yes	Yes	Yes
Temp.	120°C	230°C	230°C
Usage	Single	Multiple	Multiple
Cap	Yes	No	No

Questron Technologies Corp.

Accessory Products

Sample Storage/Transport cart

- Dedicated trolley for storing and transporting samples before and after digestion.
- Can hold up to 840 samples placed in the sample trays of various types.
- Provision to store up to 20 empty sample trays of various sizes
- Sample trays are distributed in 4 compartments accessible from two sides
- Ceramic tiled top provide convenient way to record samples in particular compartment
- Acid proof and corrosion-free construction
- Heavy duty and high quality castor wheels for easy mobility
- Inclined shelf to lock sample trays in place during movement
- Ideal for labs performing moderated to high volumes of acid digestions
- Dimension w x d x h 71 x 71 x127 cm(28 x 28 x50 in)
- Customization to accommodate your specific trays and vials available.

All Plastic Blower for handling corrosive fumes

Originally designed to exhaust highly corrosive fumes generated by Vulcan Digestion Work-station and our other products, these highly acid resistant are great for many other laboratory applications. The units operate from 120/240 VAC, 50/60 Hz and are available in two different sizes.

- Input/ output air ports 5” inch diameter.
- Totally Enclosed Fan Cooled Motor Enclosure.
- Max Ambient Temp 38.8°C, 102F.
- Max Inlet Temp 60°C, 140F.
- Noise level @ 5 Feet 77.8 dBA.

For more detailed description, ask us for a product brochure of our P.N. CT-382-104, and CT-382-102 acid resistant blowers.

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