

Metals Digestions: HotBlock™ Digestion Systems

Simplify and improve Metals Prep in your lab with HotBlock Digestion Systems.

HotBlock Systems provide faster, cleaner, more cost-effective metals digestions. Proven chemistry and superior technology produce consistent, reliable results.

- HotBlocks are made from PTFE-coated graphite in a Kydex® housing and other non-metallic materials eliminating corrosion and sample contamination.
- All electronics are isolated in a separate compartment below the block with no need for a separate controller and cables.
- Heating mats provide uniform heat distribution to all samples up to 150°C.
- HotBlocks maintain a setpoint of $\pm 0.1^\circ\text{C}$ and provide sample consistency of $\pm 1.5^\circ\text{C}$.
- The SafeSample™ alarm feature alerts you of any runaway temperatures.
- HotBlocks come with polycarbonate racks to transport samples.
- HotBlocks are available in 120V or 240V.



All HotBlocks from Environmental Express are ETL certified.

The certification is based upon the standard requirements for UL 61010- "Safety Electrical Equipment for Measurement, Control and Laboratory Use".

HotBlock Configurations:

Description	Sample Volume	Digestion Cup	Number of Samples	Number of Racks	Footprint	Catalog #
36-well HotBlock	50mL	SC475	36	2	15" X 15"	SC100
54-well HotBlock	50mL	SC475	54	3	15" X 21.5"	SC154
12-well HotBlock	50mL	SC475	12	1	8.55" X 18.5"	C6002
25-well HotBlock	100mL	SC490	25	2	15" X 15"	SC150
35-well HotBlock	100mL	SC490	35	3	15" X 21.5"	SC151
96-well HotBlock	15mL	SC415	96	3	15" X 21.5"	SC196

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Metals Digestions: HotBlock™ Digestion Systems

All Environmental Express Digestion Blocks are EPA-Approved.

Environmental Express HotBlock Systems received EPA approval in 1998 for all methods approved for hot plate digestions, including but not limited to methods 3005, 3010, 3050A, 3050B, 200.2, 200.7, 200.8, 7470A, 7471A, 245.1, 1631 and 245.7.

Polypropylene Disposable Screw-cap Digestion Cups eliminate transfer steps.

- Available in 15mL, 50mL and 100mL volumes
- Certified for low metals background
- Digestion cups are volume certified
- Lined caps ensure a leak-proof seal
- Accurate graduations eliminate the need for graduated cylinders and transfer steps

These carefully engineered digestion vessels provide premium performance in your HotBlock or AutoBlock. Cups are molded of clarified homopolymer polypropylene, providing a higher working temperature and greater chemical resistance than commonly used co-polymer polypropylene.

Accurate, molded-in graduations allow analysts to easily reproduce volumes to within 0.5%. Vessels serve as graduated cylinders as well as storage containers. After digestion is complete, the sample can be brought to volume and capped for storage, eliminating time consuming transfer steps. The result is a “one-cup” system that greatly reduces labor and costs associated with metals preparation.

The 33mm threaded cap is lined with a 0.040" polyethylene-faced foam liner for a leak-proof seal. Only the metals-free polyethylene liner comes into contact with the sample.

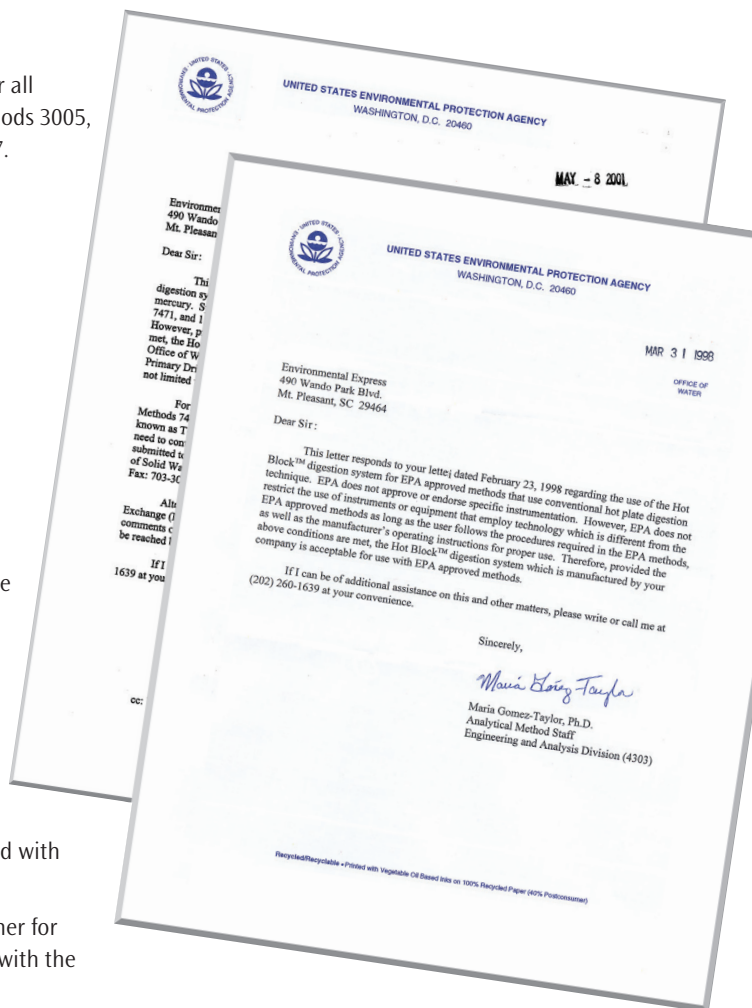
Digestion Cup Specifications:

Description	Total Capacity	Graduations	Catalog #
15mL Cup (white caps)	18mL	to 15mL	SC415
50mL Cup (green caps)	68mL	to 50mL	SC475
50mL Cup (white caps)	68mL	to 50mL	SC480-W
100mL Cup (white caps)	125mL	to 100mL	SC490

Ribbed Watch Glasses allow partial reflux during digestion.

Ribbed watch glasses are available to fit all Environmental Express digestion vessels. Polypropylene construction is naturally free of contaminants. Watch glasses have a center stem to aid in handling and decrease the potential for contamination.

Description	Digestion Cup	Catalog #
19.5mm Watch Glass	SC415	SC417
44mm Watch Glass	SC475/SC480-W	SC505
52mm Watch Glass	SC490	SC610



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Metals Digestions: HotBlock Pro Systems

Easily network two HotBlocks using the HotBlock Pro Touch-screen Controller.

The HotBlock Pro Series offers programmable metals digestions with touch-screen remote control.

HotBlock Pro components are manufactured with the same rigorous specifications as our original HotBlocks.

The touch-screen controller provides easy access and convenient networking capability.

The touch-screen controller is located outside the fume hood and can be used to operate a single block or provide easy and intuitive operation of multiple blocks. The controller can be used to run pre-programmed methods or to program custom methods. Parameters can easily be programmed, edited and saved by the user. The controller monitors the progress of each step in the digestion process.



Description	Sample Volume	Number of Samples	Digestion Cup	Racks	Footprint	Catalog #
HotBlock Pro Controller Networks any two HotBlock Pro Blocks					9.25" X 8.75"	SC180
54-well HotBlock Pro	50mL	54	SC475	3, 18-well	15" X 21.5"	SC181
36-well HotBlock Pro	50mL	36	SC475	2, 18-well	15" X 15"	SC191
25-well HotBlock Pro	100mL	25	SC490	1, 10-well; 1, 15-well	15" X 15"	SC192
35 well HotBlock Pro	100mL	35	SC490	2, 10-well; 1, 15-well	15" X 21.5"	SC182
96 well HotBlock Pro	15mL	96	SC415	3, 32-well	15" X 21.5"	SC189

HotBlock Pro



Intertek
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Metals Digestions: HotBlock Pro Systems and Custom HotBlocks

Controller Modules Include:

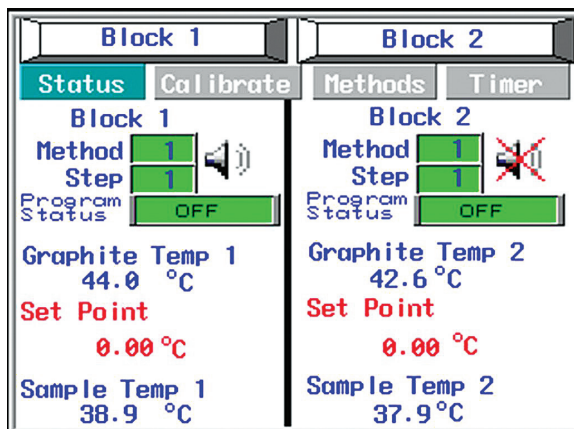
The Status Screen is continually displayed during operation of a method indicating parameters currently running. The status of two blocks can be displayed at one time if desired. When utilizing external temperature probes the screen displays the Current Sample Temperature. At the conclusion of the method an alarm sounds and the heat is turned off.

The Method Configuration Screen is used for programming and saving digestion procedures. User-defined parameters include Ramp, Set Point Temp, Soak Time and Pause. Up to 15 individual methods can be created, named and saved for future use.

The Timer Screen provides an automatic countdown timer for a variety of uses. This feature is great for adding reagents at various intervals throughout the digestion process.

Each block can be paused at any time using the Pause Feature either manually or as a programmed step during the digestion procedure. An alarm will sound to alert the analyst of this pause. Time and heat are stopped until the pause is reset by the analyst.

The optional external thermocouple can be used to monitor and record sample temperatures during the digestion process. For use with the SC180 HotBlock Pro series controller. Probe Holder is sold separately.



HotBlock Pro Block Specifications:

Temperature Range:	to 180°C
Temperature Resolution:	0.1°C
Temperature Uniformity:	±0.2°C
Internal Thermocouple:	Type K
External Thermocouple	SC183

All HotBlocks are also available in 240V.

Description	Catalog #
External Temperature Probe to use with HotBlock Pro Components	SC183
Holder for External Temperature Probe	SC184

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Sample Filtration: FilterMate

The FilterMate™ Filtration System provides a convenient, economical method for filtration for 50mL and 15mL samples and requires no transfer steps.

Samples may require filtration prior to analysis. This is especially true with sludge, wastewater and soil samples. The FilterMate fits directly into the digestion vessel and is pushed through the liquid being filtered to the bottom of the cup with a detachable plunger. After filtration is complete, the plunger is removed and discarded while the filter assembly remains in the bottom of the cup.

To Use:

1. Attach the FilterMate plunger to the filter assembly.
2. Push the FilterMate assembly through the liquid being filtered to the bottom of the digestion vessel.
3. Remove the plunger and discard.
4. Finished sample may be capped for storage or put directly into an autosampler.



Membrane Type	Sample Size	Porosity	Lot Certified	Catalog #	Quantity
PTFE-faced Polypropylene	50mL	2.0µm	No	SC0401	100
<i>Characteristics: Highest dirt capacity</i> <i>Applications: Most laboratory applications</i>					
Acid-washed Glass Fiber Filter	50mL	0.7µm	No	SC0404	100
<i>Characteristics: Porous Polyethylene Frit</i> <i>Applications: TCLP extractions.</i>					
PTFE w/additional PTFE Prefilter	50mL	0.45µm	No	SC0407	100
<i>Characteristics: Not for particulate-laden samples</i> <i>Applications: Dissolved metals only</i>					
PTFE, Certified for Trace Metals	50mL	2.0µm	Yes	SC0408	100
<i>Characteristics: High dirt capacity</i> <i>Applications: Suitable for trace level analysis</i>					
PTFE, Certified for Trace Metals	50mL	0.45µm	Yes	SC0409	100
<i>Characteristics: Low Solids</i> <i>Applications: Dissolved metals only</i>					
Polyethylene Frit	15mL	2.0µm	No	SC0421	100
<i>Characteristics: For use with SC415 digestion cups</i>					

Holder for FilterMate Filtrations (50mL cup)

This machined HDPE fixture adds stability when performing FilterMate filtrations. The holder secures the SC475 digestion cup as the FilterMate is depressed through the liquid sample.

Filter Holder Catalog # SC0510

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Sample Filtration: FlipMate Filtration Assemblies

FlipMate™ Filtration Systems provides a convenient, economical method for filtration for 50mL and 100mL samples.

The FlipMate System works with two threaded digestion cups and a filter assembly. The sample is pulled by vacuum from the sample cup through the filter assembly into the empty cup. FlipMate Systems are available with several filter options.

1. Bring sample to volume in the appropriate digestion cup.
2. Thread FlipMate Filter Assembly onto cup containing sample and tighten securely.
3. Thread an additional digestion cup onto FlipMate Filter Assembly and tighten securely.
4. Invert the entire FlipMate System, attach vacuum source and apply vacuum. In a few seconds the sample will be drawn through the filter assembly into the empty cup. Filtration speed will vary depending on sample quality. Your filtered sample can then be capped for storage or further analysis.

FlipMate Systems are available for 50mL and 100mL samples.

FlipMate 50 Systems come with:

- 200 FlipMate Filter Assemblies
- 400 SC475 Digestion Cups
- 200 caps (available with green or white caps)

FlipMate 50 Complete Systems:

Membrane Type	Sample Size	Porosity	Catalog #	Quantity
PES w/Prefilter	50mL	0.45µm	SC0601C	200
PES w/Prefilter (White Caps)	50mL	0.45µm	SC0601CW	200
Glass Fiber	50mL	1.5µm	SC0602C	200
Glass Fiber (White Caps)	50mL	1.5µm	SC0602CW	200
PES w/out Prefilter	50mL	0.45µm	SC0603C	200
PES w/PTFE Prefilter*	50mL	0.45µm	SC0604C	200

* Certified for Trace Metals

FlipMate 50 Filter Assemblies Only:

Membrane Type	Sample Size	Porosity	Catalog #	Quantity
PES Filter w/Prefilter	50mL	0.45µm	SC0601	100
Glass Fiber	50mL	1.5µm	SC0602	100
PES Filter	50mL	0.45µm	SC0603	100
PES w/PTFE Prefilter*	50mL	0.45µm	SC0604	100

* Certified for Trace Metals



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Sample Filtration: FlipMate Filtration Assemblies

FlipMate 100 Systems come with:

- 100 FlipMate Filter Assemblies
- 200 SC490 Digestion Cups
- 100 caps

FlipMate 100 Complete Systems:

Membrane Type	Sample Size	Porosity	Catalog #	Quantity
PES Filter w/Prefilter	100mL	0.45µm	SC0301C	100
Glass Fiber	100mL	1.5µm	SC0302C	100
PES w/Prefilter	100mL	0.2µm	SC0303C	100
Acid Washed	100mL	0.7µm	SC0304C	100
Acid Washed	100mL	>10µm	SC0306C	100
PES w/PTFE Prefilter*	100mL	0.45µm	SC0308C	100

FlipMate 100 Filter Assemblies Only:

Membrane Type	Sample Size	Porosity	Catalog #	Quantity
PES Filter w/Prefilter	100mL	0.45µm	SC0301	50
Glass Fiber	100mL	1.5µm	SC0302	50
PES w/Prefilter	100mL	0.2µm	SC0303	50
Acid Washed	100mL	0.7µm	SC0304	50
Acid Washed	100mL	>10µm	SC0306	50
PES w/PTFE Prefilter*	100mL	0.45µm	SC0308	50

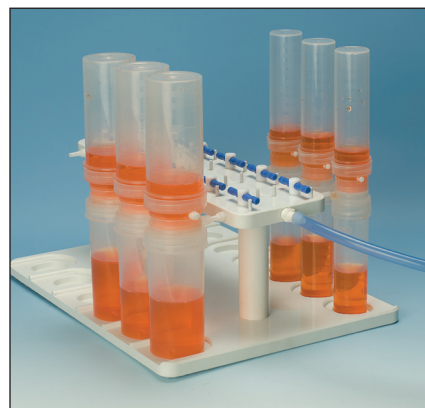
* Certified for Trace Metals

FlipMate Vacuum Manifold

The FlipMate Vacuum Manifold provides a convenient way to filter multiple samples at one time. This 12-place manifold is compatible with both the 50mL and 100mL FlipMate devices. Easily accessible valves allow for precise vacuum control during filtration. One end of the manifold is equipped with a barbed fitting to connect tubing with your vacuum pump. The other end is plugged. This plug can be removed to connect multiple manifolds to one pump. The manifold is constructed of Type 1 PVC making it resistant to acids and other chemicals commonly used in the laboratory.

FlipMate Vacuum Manifold

Catalog # SC0620



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The AutoBlock Plus comes with two Reagent Rack Kits and a Waste Carboy Assembly.

Each Reagent Rack Kit includes a six-place bottle rack, five reagent caps and five lengths of 1/8" PTFE tubing suitable for drawing reagents directly from acid bottles. The Waste Carboy has a 10-liter capacity.

Ordering Information:

Equipment and Accessories

<i>Description</i>	<i>Catalog #</i>
AutoBlock Plus with Two Reagent Rack Kits, 120V	AB4001
AutoBlock Plus with Two Reagent Rack Kits, 240V	AB4001-240
AutoBlock Plus Optional Fume Hood	AB4210
Reagent Rack Kit	ABP110
10-Liter Carboy Assembly with Cap and Tubing	ABP149



Optional Fume Hood attaches to the AutoBlock Plus and is easily vented.

EE Consumables ensure clean, accurate digestions.

Use our 50mL polypropylene disposable screw-cap Digestion Cups to eliminate transfer steps.

- **Accurate Graduations.** Molded-in graduations eliminate the need for graduated cylinders and eliminate transfer steps. Each vessel is graduated to 50mL and has a total capacity of 68mL.
- **Certificate of Analysis.** Each lot of clarified polypropylene used in the manufacture of our cups is analyzed for trace levels of specified metals. Each box of cups comes with a certificate detailing the results of this analysis. Cups are also certified for volume accuracy.
- **Screw-caps.** Polyethylene-faced, foam liner in cap ensures a leak-proof seal.

These carefully engineered digestion vessels provide premium performance in the AutoBlock Plus. Accurate, molded-in graduations allow analysts to easily reproduce volumes to within 0.5%. Vessels serve as graduated cylinders as well as storage containers.



Carefully engineered digestion vessels provide premium performance.

<i>Description</i>	<i>Catalog #</i>
50mL Disposable Digestion Cups, Case of 500	SC475
34mm Reflux Caps, Case of 1,000	SC506

Filtration Devices

Environmental Express carries a complete selection of FilterMate™ and FlipMate™ filtration products for 50mL samples. These products are designed to work with our 50mL digestion cups. Filtration Systems come with a variety of filter options. Visit our website to review our complete assortment.

Acids, Bases, Bulk Reagents

Acids, Bases and Bulk Reagents for Metals Digestions are also available from Environmental Express. Our assortment includes Acetic Acid, Hydrochloric Acid, Hydrogen Peroxide, Hydroxylamine Hydrochloride, Nitric Acid, Phosphoric Acid, Potassium Permanganate, Potassium Persulfate, Sodium Hydroxide, Sulfuric Acid and more.



FlipMate (left) and FilterMate Filtration Devices make filtration of samples easy.



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