

Wet Chemistry: Biochemical Oxygen Demand (BOD)



Never wash a BOD Bottle again!

Disposable BOD bottles from Environmental Express reduce labor and improve quality results in any environmental laboratory. Lightweight, unbreakable and recyclable, disposable bottles offer safety as well as convenience. Best of all, using a fresh, clean bottle for each analysis provides more accurate results in your lab. Use these bottles straight from the box without pre-cleaning. Bottles are packed in plastic-lined boxes to eliminate dust or residue that could adversely affect BOD results.

A specially formulated carbon coating prevents oxygen from diffusing into or out of your sample.

Ordinary plastic bottles are not suitable for BOD analysis because oxygen migrates through the plastic into the sample. Using a patented process, the inner walls of these BOD bottles are sealed with amorphous carbon. Although the coating is only 1,000 angstroms thick, it provides a superior barrier. Coated bottles consistently provide uniform blanks, precise standard recoveries and quality test data.



Disposable BOD bottles are laboratory-tested and EPA approved.

An independent study compared our disposable bottles to glass bottles with outstanding results!

The study, with 8 data sets, compared disposable plastic bottles to traditional glass BOD bottles, and reached these conclusions:

- “Improved Blanks: Plastic BOD bottles do improve blank results...”
- “Improved Results: Plastic BOD bottles might decrease bias for all samples...”
- “Improved Precision: Plastic BOD bottles result in better within-batch precision ...”

To review the “Disposable Plastic vs. Traditional Glass BOD5/CBOD5 Bottles” comparative study, with its 8 data sets, go to www.envexp.com/pdf/bodstudy.pdf.

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Disposable bottles are lightweight, compact and recyclable.

While these bottles contain the required 300mL and use existing glass or acrylic stoppers, they are slightly smaller in size than standard glass bottles. The trimmer size allows you to store more bottles in your existing BOD incubator. In addition, disposable bottles weigh only 28 grams each, reducing the weight by 85%. Best of all, after the test is complete, simply empty the bottle and toss it into the recycling bin! These bottles are made of PET, one of the most easily recyclable plastics.

The use of disposable bottles conserves water.

Most labs report it takes two to three liters of water to properly clean a BOD bottle. Multiply that amount by hundreds or thousands of bottles used and you can see that a significant amount of water goes down the drain each year. With disposable bottles, you conserve water and eliminate the use of soaps or detergents.


Bottles are numbered to facilitate sample identification.

Bottles are individually numbered. Large 1/4" high numbers won't wash off and do not interfere with recycling.



Description	Catalog #
300mL Disposable BOD Bottles	D1001

Quantity discounts are available.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
OCT 28 2003
OFFICE OF WATER

Environmental Express provided data from seven laboratories comparing results obtained using single use, coated-PET bottles with those obtained using glass BOD bottles in a number of sample matrices. The data indicated that comparable performance was achieved with both bottle types. Therefore, EPA recommends that Environmental Express's single use, coated-PET BOD bottles be allowed for use with EPA-approved BOD methods (e.g., EPA Method 405.1) and associated methods for determination of dissolved oxygen (e.g., EPA Methods 360.1, 360.2) that are used in wastewater compliance monitoring. Each bottle should only be used for a single use, as directed by the manufacturer.

“EPA recommends that Environmental Express’s single use, coated PET BOD bottles be allowed for use with EPA-approved BOD methods (e.g., EPA Method 405.1) and associated methods for determination of dissolved oxygen (e.g., EPA Methods 360.1, 360.2) that are used in wastewater compliance monitoring...”

United States Environmental Protection Agency
October 28, 2003

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Wet Chemistry: Additional Products for BOD



Acrylic Bottle Stoppers are an economical alternative to glass stoppers.

While your existing glass or plastic stoppers will work perfectly with our disposable BOD bottles, we offer these less expensive acrylic stoppers as an alternative.

Description	Catalog #
Acrylic Bottle Stoppers	D1025



BOD Overcaps fit tightly over your BOD Bottle to prevent evaporation.

The use of a cap over the mouth of a BOD bottle is required by *Standard Methods* to prevent evaporation. Our overcaps are made of polyethylene and fit snugly against the rim and shoulder of the bottle.

Description	Catalog #
BOD Overcaps	D1050

Environmental Express now offers 300mL glass BOD bottles with stoppers.

These bottles have been designed for sampling and for incubation of aqueous samples for biochemical oxygen demand (BOD) analysis. For reference Method 5210-B: 5-Day BOD Test (*Standard Methods for Examination of Water and Wastewater*). The bottles conform to ASTM E438, Type I, Class B, borosilicate glass.

The design incorporates a flared mouth used to form a water seal which prevents the drawing of air into the bottle during incubation. The bottle shoulder radius has been improved to provide an interior shape which sweeps entrained air out of the stopper opening. Stopper design uses a conical extension to displace excess sample. Bottles are sold in cases of 24.

Description	Catalog #
300mL BOD Bottles with Glass Stoppers	D1003

Automated systems may require a robotic style stopper. Acrylic stoppers (pictured above) are a perfect fit for our glass bottles.

Description	Catalog #
Acrylic Stoppers	D1025



60mL Borosilicate Glass BOD Bottles with Glass Stoppers are ideal for a variety of applications.

Applications include incubating diluted samples of sewage, sewage effluents, polluted waters, and industrial wastes to determine biological oxygen demand. The specially designed shoulder radius sweeps all air from the bottle during filling. Interchangeable stoppers have tapered bottoms that also prevent air entrapment. Bottles have opaque white writing patch.

Description	Catalog #
60mL BOD Bottles with Glass Stoppers	D1006



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Wet Chemistry: Additional Products for BOD

BOD Bottle Storage Racks

With safe and convenient transportation of your BOD bottles, these stackable racks are plastic coated for corrosion resistance.



Description	Dimensions	Bottle Size	Catalog #	Capacity
BOD Bottle Transfer Rack	13"w x 10"d x 6"h	60mL	D1051	20
BOD Bottle Transfer Rack	13"w x 10"dx 8"h	300mL	D1052	12
BOD Bottle Storage Rack	12.5" x 9.25" x 7.25"	300mL	D1053	12



BOD Bottle Carrier

Safely transport and organize eight standard 300mL BOD bottles.

- Constructed of rugged polypropylene to be chemical resistant
- Autoclavable at 121° C (250° F)

Description	Dimensions	Bottle Size	Catalog #	Capacity
BOD Bottle Carrier	13.125"w x 6.75"d x 6.25"h	300mL	D1054	8



Disposable BOD Bottle Holders for Automated Systems

12-place Thermo® Orion® Rack Insert

Constructed of 1/2" high-density polyethylene, these rack inserts hold disposable BOD Bottles securely in place in Thermo Orion BOD Analyzer. Racks slip directly into standard Thermo Orion trays.

Description	Dimensions	Fits Bottle	Catalog #	Capacity
Thermo Rack Insert	10.875"w x 8.125"d x 2"h	D1001	D1055	12



Skalar® Rack Inserts

These rack inserts, constructed of expanded closed-cell PVC for reduced weight, hold disposable BOD Bottles securely in place in Skalar Analyzers. Available in two sizes.

Description	Dimensions	Fits Bottle	Catalog #	Capacity
Skalar Rack Insert	12"w x 12.5"d x 2.25"h	D1001	D1058	16
Skalar Rack Insert	18.125"w x 9"d x 2.25"h	D1001	D1059	18

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Wet Chemistry: Additional Products for BOD

Prepared Reagents and Standards for BOD Analysis save time and reduce operating costs in your lab.



Try convenient, single-use Glucose Glutamic Acid vials for 300mL BOD Bottles.

- No Pipetting
- No Dilution Factor
- No Contamination

Each vial contains 6mL of the APHA specified concentration of Glucose Glutamic Acid (150mg/L of Glucose, 150mg/L of Glutamic Acid).

To use, shake the vial thoroughly, remove the seal covering the cap, unscrew the cap, pour contents, and rinse emptied vial at least two times with BOD water into the check standard solution. This product has a 24 month shelf life and is supplied with MSDS.

Description	Catalog #
Single-use GGA Standard, case of 24 Vials	D1243



4-bottle set of solutions for BOD Dilution Water:

Reagents and standards are manufactured according to *Standard Methods 5210B* for 5-day BOD testing. Solutions conform to regulations requiring fresh solutions. When mixing BOD dilution water add 1mL of each solution to 1 liter of water. Includes one bottle each:

- Calcium Chloride Solution, 2.75% (D1241-1L)
- Ferric Chloride Solution, 0.25% (D1242-1L)
- Magnesium Sulfate Solution, 2.25% (D1244-1L)
- Phosphate Buffer Solution, pH 7.2 (D1245-1L)

Solution	Volume	Catalog #
4-Bottle BOD Set	1L bottles	D1500-1L
4-Bottle BOD Set	100mL bottles	D1500-100



GGA Concentrate Ampoules for use with 60mL BOD bottles require no pipets.

Stable, certified single-use ampoules are an easy way to make GGA test preparations. Potential for GGA degradation is eliminated and with quantitative transfer, no dilution errors can occur. Call our customer service department to order a free trial pack.

Description	Catalog #
GGA Standard, 1.2mL Ampoules	D1243C

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Wet Chemistry: Additional Products for BOD

Save time and simplify BOD analysis with the YSI 5100 Advanced Benchtop DO Meter.

Multitasking is enhanced with the auto-stabilization capability, which enables you to predefine a stable reading and be alerted to that condition. An RS-232 interface allows upload to spreadsheets.



- Stores 100 data sets
- Large liquid crystal display and keyboard profile
- Onboard software for OUR/SOUR measurement
- RS-232 computer interface
- Built in barometer for autocalibration
- Barcode compatible



Description	Catalog #
Benchtop DO Meter for BOD	D051004

YSI Stirring BOD Probe connects directly to the 5100 Meter and eliminates the need for stir bars.

Self-stirring probe has a classic design for true reliability and features:

- Easily replaceable screw-on cap membranes
- Tapered probe body that fits into a standard 300mL BOD bottle (use with our disposable or glass BOD bottles)
- Connection directly to the 5100 meter

Description	Catalog #
Self-stirring BOD Probe	D050102
Replacement Membrane (screw-cap w/solution)	D059880

Get consistent BOD results with Polyseed®.

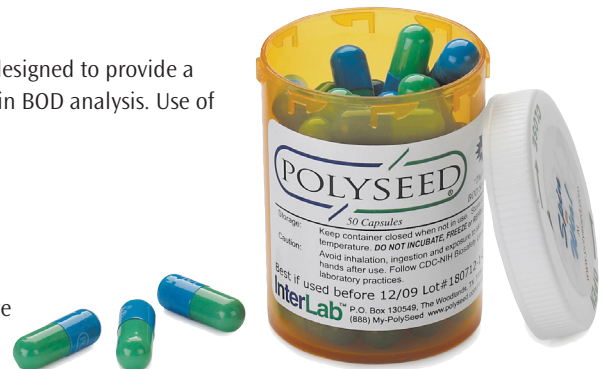
Polyseed is a blend of special microbial cultures in an easy-to-use capsule designed to provide a uniform standard for the degradation of both industrial and municipal waste in BOD analysis. Use of Polyseed provides fresh, consistent seed on a continuous basis.

Description	Catalog #
Polyseed Capsules, 50 Capsules	D1250

Polyseed NX for CBOD testing inhibits nitrifying bacteria.

Polyseed NX is a special blend of microbial cultures with a chemical additive that inhibits nitrogenous oxygen demand when performing CBOD.

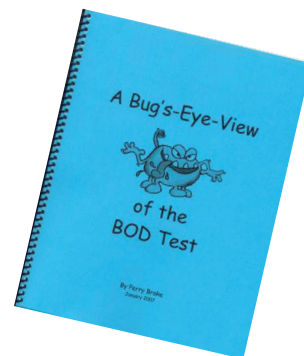
Description	Catalog #
Polyseed NX Capsules, 50 Capsules	D1255



A Bug's-Eye-View of the BOD Test by Perry Brake contains a troubleshooting guide for analysts.

The goal of this book is to remove much of the mystery associated with the BOD test. The 54 pages of text contain explanations of confusing passages in Standard Methods 5210B. A troubleshooting guide focuses on common problems, suggests causes, and recommends potential corrective actions. Each book comes with a supplementary compact disk.

Description	Catalog #
BOD Book	D1020



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Wet Chemistry: Filters

Filters for Total Suspended Solids, Volatile Suspended Solids and Total Dissolved Solids and are always in stock.

Environmental Express uses a 75 watt CO₂ laser to cut perfect filters in a variety of sizes. Laser cutting ensures a clean, fiber-free filter edge that maintains its integrity throughout the washing, drying and filtration processes.

Washed and Dried 1.5µm Borosilicate Glass Fiber are available for TSS. Weights have not been determined for these filters.

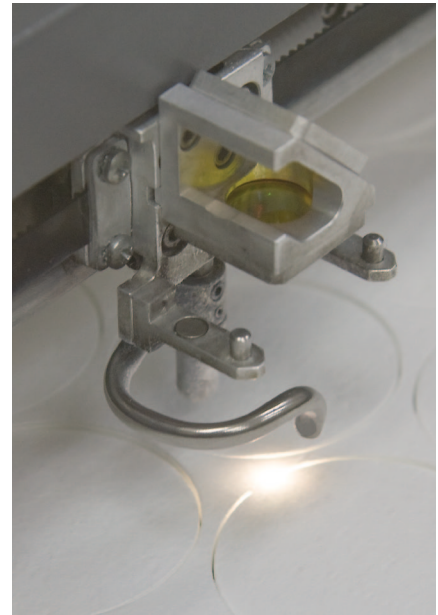
Each individual filter has been rinsed three times with DI water and dried to 105°C for Total or 550°C for Volatile Suspended Solids. These filters are typically used in Solids Testing of Wastewater Samples. A typical application is Standard Methods 2540.

Washed and Dried Filters are sold in packs of 100.

Description	Filter Size	Application	Catalog #
1.5µm Borosilicate Glass, Washed & Dried	24mm	TSS	F92424MM
	34mm	TSS	F92434MM
	43mm	TSS	F92443MM
	47mm	TSS	F92447MM
	55mm	TSS	F92455MM
	70mm	TSS	F92470MM
	90mm	TSS	F92490MM
	110mm	TSS	F924110M
	125mm	TSS	F924125MM
	47mm	VSS	F92447VOL
90mm	VSS	F92490VOL	
110mm	VSS	F924110VOL	

Raw 1.5µm Borosilicate Glass Fiber Filters for air and water analysis.

Description	Filter Size	Catalog #
1.5µm Borosilicate Glass Fiber Filters	21mm	FG85021MM
	24mm	FG85024MM
	25mm	FG85025MM
	32mm	FG85032MM
	35mm	FG85035MM
	37mm	FG85037MM
	43mm	FG85043MM
	47mm	FG85047MM
	55mm	FG85055MM
	70mm	FG85070MM
	90mm	FG85090MM
	102mm	FG85102MM
	110mm	FG85110MM
	125mm	FG85125MM
	142mm	FG85142MM
150mm	FG85150MM	



Environmental Express multi-purpose filters:

- Are available in a variety of sizes and filter media
- Are laser cut for sealed edges
- Are always in stock
- Provide consistently stable weights

Contact our Technical Sales Department if you need assistance finding the right filter for your application.

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Wet Chemistry: StepSaver for Oil and Grease Method 1664

The patented StepSaver™ for solid phase extraction saves time and simplifies EPA Method 1664 for Oil and Grease.

The StepSaver streamlines the extraction process by allowing the analyst to collect the solvent with eluted oil and grease directly into a collection flask. As the eluent enters the collection flask it passes through a drying cartridge to remove any excess water so it is ready to be evaporated without a separate drying step.

StepSaver Systems are easy and efficient to use.

After activating the filter, pour your sample into the funnel and attach a vacuum source. Turn the stopcock to allow the sample waste to pour off into the waste carboy. Close the stopcock and add n-Hexane to elute off the oil and grease. Turn the stopcock the other direction to allow the n-Hexane to pass through the Na₂SO₄ drying cartridge and into the pre-weighed collection flask. Your sample is ready to be evaporated.

StepSavers come in several configurations. Choose the funnel type, manifold material and number of stations that best suits your lab.



Funnel Types

- Reusable 1000mL glass funnels that you use with individual UltraFlow filters
- Disposable 250mL polypropylene filter funnels that come with the UltraFlow filters already in place

Manifold Types

- PVC manifolds come in 1, 3 or 7 stations
- Stainless Steel manifolds come in 1, 3 and 6 stations

Glass Funnel StepSaver Systems for 47mm Filters come with:

Equipment

- Specified Manifold
- Specified Number of Extraction Stations: Each station comes with:
 - 1 1000mL Glass Funnel (G1017)
 - 1 Extraction Head with 40/35 Ground Glass Joint (G1020)
 - 1 120° 2-way PTFE Stopcock (G1025)
 - 1 Stainless Steel Filter Screen (G1030)
 - 1 Fluorosilicone Sealing Gasket (G3030)
 - 1 Aluminum Clamp (G1055)
 - 1 Keck Clip (G1050)
 - 2 100mL Borosilicate Glass Collection Flasks (G1045)
- 1 20-Liter HDPE Waste Carboy with Tubing and Fittings (G3070*)
 - * Note: 1 Station Systems come with 4L Carboy with Tubings and Fittings (G3064)

Consumables

- 2 Boxes of 20 47mm UltraFlow Filters (G5047MM)
- 1 Pack of 50 Sodium Sulfate Drying Cartridges (G1065)
- 1 Box of 20 x 10mL 40mg HEM Snip and Pour Standards (G3025)
- 1 Box of 20 x 10mL 7 mg HEM MDL Snip and Pour Standards (G3023)

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Wet Chemistry: StepSaver for Oil and Grease Method 1664

Glass Funnel StepSaver Systems for 47mm:

Description	Manifold	Catalog #
StepSaver System, 1-Station, Glass Funnel	PVC	G1101
StepSaver System, 3-Station, Glass Funnel	PVC	G1103
StepSaver System, 7-Station, Glass Funnel	PVC	G1107
StepSaver System, 1-Station, Glass Funnel	Stainless Steel	G2101
StepSaver System, 3-Station, Glass Funnel	Stainless Steel	G2103
StepSaver System, 6-Station, Glass Funnel	Stainless Steel	G2106
Stations can also be purchased separately		
Individual Station, 47mm, Glass Funnel	—	G1047
Stations with 90mm filters are also available		
Individual Station, 1000mL Glass Funnel with 90mm opening	—	G1090

Note: The G1300 will NOT accommodate six 90mm StepSaver kits due to branch spacing.

StepSaver Complete Systems are also available with our convenient 47mm UltraFlow disposable Filter Funnels.

Disposable StepSaver Systems for 47mm Filters come with:

Equipment

- Specified Manifold
- Specified Number of Extraction Stations: Each station comes with:
 - Extraction Head with 40/35 Ground Glass Joint (G1020)
 - 1 120° 2-way PTFE Stopcock (G1025)
 - 1 Stainless Steel Filter Screen (G1030)
 - 1 Fluorosilicone sealing gasket (G3030)
 - 1 Aluminum Clamp (G1055)
 - 1 Keck Clip (G1050)
 - 2 100mL Borosilicate Glass Collection Flasks (G1045)
- 1 20-Liter HDPE Waste Carboy with Tubing and Fittings (G3070)*

** Note: 1 Station Systems come with 4L Carboy with Tubings and Fittings (G3064)*

Consumables

- 2 Packs of Disposable UltraFlow Filter Funnels (G5127)
- 1 Pack of 50 Sodium Sulfate Drying Cartridges (G1065)
- 1 Box of 20 x 10mL 40mg HEM Snip and Pour Standards (G3025)
- 1 Box of 20 x 10mL 7 mg HEM MDL Snip and Pour Standards (G3023)

Description	Manifold	Catalog #
StepSaver System, 1-station, Disposable Funnel	PVC	G1121
StepSaver System, 3-Station, Disposable Funnel	PVC	G1123
StepSaver System, 7-Station, Disposable Funnel	PVC	G1127
StepSaver System, 1-station, Disposable Funnel	Stainless Steel	G2121
StepSaver System, 3-Station, Disposable Funnel	Stainless Steel	G2123
StepSaver System, 6-Station, Disposable Funnel	Stainless Steel	G2126
Stations can also be purchased separately		
Individual Station, 47mm, Without Funnel	—	G5747



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Wet Chemistry: Filters for Oil and Grease

Environmental Express Is Your Source for Filters for Oil and Grease Analysis.



UltraPrep™ Premium Filters Eliminate the Need For Conditioning with a Polar Solvent such as Methanol!

UltraPrep filters follow EPA 1664 for Solid Phase Extraction of Oil and Grease but eliminate the need for activation! UltraPrep Extraction Filters are embedded with a unique hydrophilic C-18 material that does not need to be kept wetted, making sample filtration easier for the laboratory and eliminating any potential of a co-solvent coming into contact with the sample assuring method compliance.

Similar in design to our tested and proven reliable UltraFlow™ Filters, UltraPrep Filters have a prefilter layer, consisting of coarse glass fibers. The addition of the prefilter layer improves filtration speed and recoveries and eliminates the need for a separate prefilter.

Performance and comparison data is available on request.

UltraPrep Patent Pending.

Description	Filter Size	Catalog #	Pack
UltraPrep Hydrophilic C-18 Filters w/Prefilter	47mm	GUP047MM	20
UltraPrep Hydrophilic C-18 Filters w/Prefilter	90mm	GUP090MM	15
UltraPrep Hydrophilic C-18 Filters w/Prefilter	100mm	GUP100MM	15

UltraFlow™ Filters Require Conditioning but Eliminate the Need for a Separate Prefilter.

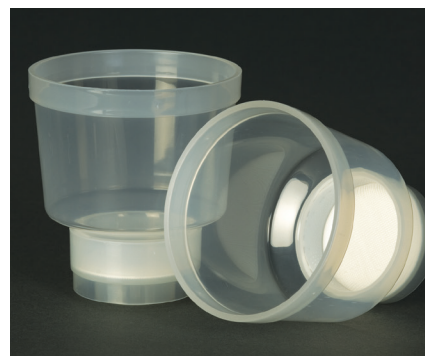
UltraFlow Filters from Environmental Express provide great recoveries, fast flow rates and high solids filtering capacity for EPA 1664 testing. UltraFlow Filters have two layers. The bottom layer, made of fine glass fibers infused with C-18 adsorbent attracts and holds the HEM fractions. The top layer, consisting of coarse glass fibers, improves filtration and eliminates the need for a separate prefilter.

Description	Filter Size	Catalog #	Pack
UltraFlow C-18 Filters w/Prefilter	47mm	G5047MM	20
UltraFlow C-18 Filters w/Prefilter	90mm	G5090MM	15
UltraFlow C-18 Filters w/Prefilter (Horizon® SPE-DEX® disks only)	100mm	G5100MM	15

UltraLow C-18 Filters are available without the pre-filter layer.

These filters have the same extraction capacity as UltraFlow filters without the added prefilter layer. They use 30% less hexane but may not be suitable for samples containing large amounts of fats, silts, colloidal substances or other suspended material.

Description	Filter Size	Catalog #	Pack
C-18 Filters w/o Prefilter	47mm	G5347MM	20
C-18 Filters w/o Prefilter	90mm	G5390MM	15
C-18 Filters w/o Prefilter	100mm	G5300MM	15
Glass Fiber Prefilter	47mm	FG65047MM	50
Glass Fiber Prefilter	90mm	FG65090MM	50



UltraFlow and UltraPrep Disposable Filter Funnel Assemblies:

UltraFlow and UltraPrep Filters can be purchased alone or in Filter Funnel Assemblies. The polypropylene, disposable funnel housings have over 250mL capacity. Tests show no measurable extractable levels in the polypropylene housings.

Disposable Funnel for EE StepSaver™
47mm UltraFlow Filter, 20pk
Catalog # G5127

Disposable Funnel for EE StepSaver™ with
47mm UltraPrep Filter, 20pk
Catalog # GUPF47EES

Disposable Funnel for J.T. Baker® Manifold
47mm UltraFlow Filter, 20pk
Catalog # G5247

Disposable Funnel for J.T. Baker® Manifold
47mm UltraPrep Filter, 20pk
Catalog # GUPF47JTB



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Wet Chemistry: Standards for Oil and Grease

Try convenient Snip & Pour™ Standards for Oil and Grease analysis using Separatory Funnels (LLE) or Solid Phase Extraction (SPE).

Environmental Express standards meet all EPA requirements for Hexadecane/Stearic Acid Spiking Solution as specified by EPA Method 1664 for quality control sample analysis (see paragraph 7.10 of the method). Each lot of standards is checked gravimetrically and by GC.

Snip & Pour Standards are packaged in convenient PTFE tubes.

Just snip the top of the PTFE tube and pour the contents into the sample container or extraction apparatus. The precise volume of HEM is delivered to the LCS or Matrix Spike sample. Inexpensive tubes eliminate pipettes and require no warming prior to use. You may refrigerate these standards but for best results bring to room temperature prior to use. Each G3025 tube contains 40mg of extractable HEM per 10mL aliquot as mentioned in EPA method 1664. The G3026 tube contains 10mg extractable HEM for performing MDL analysis. Other concentrations are also available.

Standards are also available in 30mL bottles.

Standards also come packaged in nine 30mL screw-top bottles (G3020) for the pipetting of non-standard volumes. 10mL of solution delivers 40mg HEM. Standards are suitable for LCS and Matrix Spike samples and meet all EPA 1664 requirements for both Separatory Funnel (LLE) and Solid Phase Extraction (SPE) techniques. Bottled standards require refrigeration.

Oil and Grease Standards are supplied with a Certificate of Analysis.

Oil and Grease Standards are prepared using Class A volumetric glassware, analytical balance (0.0001mg) verified against NIST traceable weights prior to use, and high purity Acetone (<1mg/L residue). Stearic acid and hexadecane purities, CAS # and gravimetric concentration are stated on each certificate of analysis. Each lot of oil and grease standards is analyzed according to EPA Method 1664 and the results are provided on the Certificate of Analysis. Certificates provide lot numbers and expiration dates for each standard. MSDS is also supplied with each box of standards.

Laboratory Control Standards

Concentration	Catalog #	Volume	Pack
20mg hexadecane / 20mg stearic acid (40mg HEM in 10mL acetone)	G3025**	10mL	20
20mg hexadecane / 20mg stearic acid (40mg HEM in 5mL acetone)	G2018	5mL	20
20mg hexadecane / 20mg stearic acid (9 bottles, 40mg per 10mL HEM in 30mL acetone)	G3020	30mL	9

Standards for MDL Studies

3.5mg hexadecane and 3.5mg stearic acid (7mg HEM in 10mL acetone)	G3023	10mL	20
MDL Standard, 5mg HEM, 10mL tubes	G3024	10mL	20
5mg hexadecane and 5mg stearic acid (10mg HEM in 10mL acetone)	G3026	10mL	20

** Concentration listed in EPA Method 1664.



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Wet Chemistry: Evaporator for Oil and Grease



QuikVap™ Evaporating System efficiently evaporates n-Hexane and is adaptable for pans and flasks.

This versatile evaporation system is adjustable in temperature, air flow and vessel configuration to allow the analyst to use 100mL borosilicate flasks, 70 or 105mm aluminum pans to evaporate n-Hexane quickly. Connect the QuikVap to your source of dried air or nitrogen and preheat the block to 65°C. Adjust the flow control valve to achieve the desired low flow of air or nitrogen. Evaporate to dryness in your pre-weighed vessels (40mL of solvent will take approximately 20 minutes to evaporate). Following the method, desiccate and reweigh. Operation of the QuikVap should take place under an operating fume hood.

The system comes with block heater with pre-inserted six-position flask manifold, anodized aluminum pan adaptor plate, six curved needles, six needle adaptors, flow control valve with attached hose barb adaptor and one complimentary box of 105mm aluminum pans.



The QuikVap can be used with 70mm, 105mm aluminum pans or 100mL flasks.

Typically, the analyst will evaporate samples from either 100mL flasks or from aluminum pans, but not both. The QuikVap can be used for either method. The base unit accommodates 100mL flasks. The addition of the pan adaptor plate (included) configures the QuikVap for analysis using either 70mm or 105mm pans. Instructions for use will accompany your unit. You will also find more information on our website.



The addition of the pan adaptor plate easily configures the QuikVap for analysis using aluminum pans.



Description	Catalog #
QuikVap Evaporating System	G7000
QuikVap Evaporating System, 240 volt	G7000-240
100mL Borosilicate Flasks	G1045
Aluminum evaporating pan, 105mm diameter, 100/pk	F93140DSH
Aluminum evaporating pan, 105mm diameter, 1000/pk	F93140DSH-C
Aluminum evaporating pan, 70mm diameter, 100/pk	F93447DSH

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Wet Chemistry: Ion Chromatography (IC)



Environmental Express is your source for reliable, economical IC supplies.

Environmental Express offers a range of products to support ion chromatography. From standards to buffers to sample cleanup, we provide in-stock products and the highest level of customer service.

Sample Handling Products for Dionex® Autosamplers.

AS-40 Consumables:

Our 5mL vials fit directly into existing AS-40 sample cassettes. The straight-sided polypropylene vials are typically supplied with filtering caps fitted with polyethylene frits.

As the autosampler probe descends into the vial, the cap is forced down and sample is forced up and through the sampling system into the instrument. Our vials are available with your choice of filtered or non-filtered caps. For small samples we offer the 0.5mL vial and filtering caps with the same range of product choices.

Vials and Caps for Dionex AS-40 Autosampler

Description	OEM #	Catalog #	Quantity
5mL vial and cap with filter	038141	K1250	250
5mL vial and cap w/o filter	—	K4250	250
5mL vial only	038008	K2250	250
Cap for 5mL vial with filter	038009	K3250	250
Cap for 5mL vial w/o filter	—	K3200	250
0.5mL vial and cap with filter	038142	K4270	250
0.5mL vial and cap w/o filter	—	K4280	250



AS-50 Consumables:

For AS-50 autosamplers we provide a 7mL polypropylene vial with pierce cap. This is an alternative to the 10mL vial with screw cap and septum that is typically used on the AS-50. In this product, an easily pierced, thin walled polyethylene cap serves as the septum.

For smaller samples we also offer the standard 1.5mL vial with slit cap.

Vials and Caps for Dionex AS-50 Autosampler

Description	OEM #	Catalog #	Quantity
Nominal 7mL vial with pierce cap	055058	K4300	250
1.5mL Polypropylene vial with septum cap	061696	K4350	100

Our Stainless Steel Probe Tip replaces the thermoplastic tip for the Dionex AS/40 & AS-DV autosamplers.

The stainless steel tip will not scratch or deform ensuring extremely long service life. The tip is fully rounded to provide a better engagement with the filter cap. The tip comes with 18" of 0.010mm X 0.062mm FEP tubing inserted.

Description	OEM #	Catalog #	Quantity
Probe tip for Dionex AS/40 & AS-DV	040836	K1001	Each



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Wet Chemistry: Ion Chromatography (IC)

Polypropylene conical tubes are available for use in the Metrohm-Peak® Autosampler.

Tubes are 16.8mm in diameter and have a capacity of 12mL. Polyethylene caps keep airborne contamination out, but are easily penetrated by sampling needles. Caps and tubes are also sold separately.

Description	OEM #	Catalog #	Quantity
12mL tube with break cap	M.274.110	SC0250	1000
12mL tube w/o break cap	—	SC0251	1000
Break caps for SC0251	—	SC0252	1000

47mm Final Filter for Metrohm-Peak IC

0.1µm asymmetric polyethersulfone filter provides fast flow rate and ultra-fine particle trapping for final sample filtration in Metrohm-Peak systems.

Description	OEM #	Catalog #	Quantity
47mm PES, 0.1µm filter	6.2714.020	F470100PES	100

Eluent Buffers for Ion Chromatography

IC eluent concentrates provide five, ten-liter aliquots of final working solution. Bring solution to volume with Type 1 water. Concentrates meet requirements of EPA 300, and are supplied with MSDS and Certificate of Analysis. All eluent buffers are supplied in sets of five 100mL bottles.

Description	Catalog #	Quantity
Sodium Bicarbonate 0.5M, after dilution	IC-E1100	5
Sodium Carbonate 0.5M, after dilution	IC-E1200	5
Sodium Carbonate 0.18M / Sodium Bicarbonate 0.17M, after dilution	IC-E1300	5
Sodium Carbonate 0.35M / Sodium Bicarbonate 0.15M, after dilution	IC-E1400	5
Sodium Carbonate 0.45M / Sodium Bicarbonate 0.14M, after dilution	IC-E1600	5
Sodium Carbonate 0.32M / Sodium Bicarbonate 0.10M, after dilution	IC-E1800	5

Clean up samples prior to analysis with Ion Removal Cartridges.

A variety of ion removal cartridges are available to clean up samples prior to analysis. Resins are packed in inert polypropylene housings. Housings accept slip luer or luer-lock syringes.

Description	Size	Catalog #	Quantity
CleanUp Cartridge, Ag	1cc	K4420	50
CleanUp Cartridge, Ag	2.5cc	K4421	50
CleanUp Cartridge, Ba	1cc	K4440	50
CleanUp Cartridge, Ba	2.5cc	K4441	50
CleanUp Cartridge, H	1cc	K4450	50
CleanUp Cartridge, H	2.5cc	K4451	50
CleanUp Cartridge, Ag/H	1cc	K4460	50
CleanUp Cartridge, Ag/H	2.5cc	K4461	50
CleanUp Cartridge, Ba/Ag/H	2.5cc	K4462	50



Conical tubes for use in Metrohm-Peak IC Autosampler.



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Wet Chemistry: SimpleDist Distillation Systems



Ammonia and Cyanide Distillations are safe and easy with the SimpleDist™ System from Environmental Express.

The SimpleDist is the optimal system for performing cyanide and ammonia distillations following established US EPA and Standard Methods methodology.



Minimal glassware ensures economy and safety.

Our unique design replaces much of the fragile glassware used in other systems with disposable collection traps and other consumables, reducing labor associated with maintenance and clean up. With the SimpleDist System the only glassware required is the boiling tube.

The system is easy to operate.

The distilled ammonia or cyanide is collected in the trap and does not require the use of a chiller or any water lines. The sample solution boils in the boiling tube and the ammonia or cyanide gas is released and pulled by vacuum to the collection trap containing the appropriate catch solution. A hydrophobic porous frit in the base of the collection trap allows the vacuum to pull the gas into the scrubbing solution but prevents the solution from flowing back into the boiling tube. After collection is complete, the convenient collection trap is removed and contents are ready for analysis.

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Wet Chemistry: SimpleDist Distillation Systems

The SimpleDist System conforms to established methods.

The SimpleDist uses the same reagents in the same molar concentrations as EPA Method 335.4, and Standard Method 4500-CN-C for Cyanide as well as EPA Method 350.1 and Standard Methods 4500-NH3 for Ammonia.

For Ammonia:

25mLs of sample is reacted with borate buffer in the boiling tube. The sample is then heated at a temperature of 135°C for 60 minutes. Ammonia is released from the sample and pulled by vacuum into the collection trap containing a catch solution of either 0.04N H₂SO₄ or Boric Acid.

For Cyanide:

50mLs of sample is reacted with 18N H₂SO₄ in the boiling tube. The sample is then heated at a temperature of 125°C for 60 minutes. Cyanide is released as HCN gas which is pulled by vacuum into the collection trap containing 0.25N NaOH.

The complete procedure takes approximately 1.5 hours, 30 minutes for the block to heat and 60 minutes for complete distillation.

SimpleDist Systems come with:

- 12-place HotBlock
- 12-valve Manifold Kit

SimpleDist manifold kits may be used to convert a 36-well or 54-well HotBlock into a distillation system.

The 12-position manifold kit can be purchased separately to convert your 36-well HotBlock (SC100) into a SimpleDist System. An 18-valve SimpleDist manifold is also available and fits our 54-well HotBlock (SC154).

12-valve Manifold Kit (for use with 12- or 36-well HotBlock)

- 12-valve manifold
- 12 flow control valves
- 1 barb connector
- 12 borosilicate boiling tubes
- 1 pack of (C6100) 25mL collection traps
- 1 pack of (C6110) reagent addition tubes
- 2 packs of (C6120) caps
- 2 packs of (C6120A) black neoprene washers
- 2 packs of (C6130) two-port cap inserts
- 1 (C6142) tubing kit

18-valve Manifold Kit (for use with 54-well HotBlock)

- 18-valve manifold
- 18 flow control valves
- 1 barb connector
- 18 borosilicate glass boiling tubes
- 1 pack of (C6100) 25mL collection traps
- 1 pack of (C6110) reagent addition tubes
- 3 packs of (C6120) caps
- 3 packs of (C6120A) black neoprene washers
- 3 packs of (C6130) two-port cap inserts
- 2 (C6142) tubing kits

Description	Catalog #
12-valve SimpleDist Complete	C6000
12-valve Manifold Kit	C6210
18-valve Manifold Kit	C6200

Accessories and Consumables

Description	Catalog #
Boiling Tube, borosilicate glass, 30mm x 200mm	C6010
12-place Tube Rack	C6050
25mL Collection Traps	C6100
Reagent Addition Tube with Funnel Tip,	C6110
38mm Screw-cap, Polypropylene	C6120
Black Washers, Neoprene	C6120A
Two-port Cap Insert	C6130
Tubing Adaptors to fit 1/4" ID tubing and cyanide trap	C6140
Tubing Kit, 12 pre-cut pieces of tubing and 12 adaptors inserted	C6142
25' length of Silicone Rubber Tubing, .375" OD x .25" ID	C6145



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Wet Chemistry: Syringe Filters



The unique design of our CLARITY™ High Performance 25mm Syringe Filters improves flow rate.

Our unique syringe filter design increases the effective filtration area by 31% over the leading brands of 25mm syringe filters. Greater filtration area allows more sample to pass through the filter resulting in better flow rate and less flow decay from particulate loading.

All Environmental Express syringe filters are housed in inert polypropylene and are ultrasonically welded for a positive, particle-free seal. Polypropylene housings are naturally low in extractables and have higher resistance to chemical degradation than acrylic housings. Housings have standard, slip luer fittings on the exit port and full-thread luer-lock fittings on the entry port. Syringe filters come in several membrane types. Different filter porosities are also available. Visit our website for a complete list.



25mm Syringe Filters w/out Prefilter, Packs of 200

Filter Membrane	Porosity	Size	Catalog #
Nylon	0.2µm	25 mm.	SF020N
Polyethersulfone (PES)	0.2µm	25 mm.	SF020E
Polyvinylidifluoride (PVDF)	0.2µm	25 mm.	SF020V
PTFE	0.2µm	25 mm.	SF020T
Cellulose Acetate	0.45µm	25 mm.	SF045CA
Nylon	0.45µm	25 mm.	SF045N
Polyethersulfone (PES)	0.45µm	25 mm.	SF045E
Polyvinylidifluoride (PVDF)	0.45µm	25 mm.	SF045V
PTFE	0.45µm	25 mm.	SF045T
Expanded PTFE, Ultra Clean for Metals	2.0µm	25 mm.	SF200T
Glass Fiber Filter	1.2µm	25 mm.	SF012G
Glass Fiber Filter	1.5µm	25 mm.	SF015G
Glass Fiber, Acid Washed, TCLP Grade	0.7µm	25 mm.	SF1070G

25mm Syringe Filters are also available with Prefilters.

Binderless glass prefilters greatly increase the capacity of syringe filters and decrease backpressure during filtration.

25mm Syringe Filters with Prefilter, Packs of 200

Filter Membrane	Porosity	Size	Catalog #
Nylon, Prefilter	0.2µm	25 mm.	SF120N
Polyethersulfone (PES), Prefilter	0.2µm	25 mm.	SF120E
Polyvinylidifluoride (PVDF), Prefilter	0.2µm	25 mm.	SF120V
PTFE, Prefilter	0.2µm	25 mm.	SF120T
Cellulose Acetate, Prefilter	0.45µm	25 mm.	SF145CA
Nylon, Prefilter	0.45µm	25 mm.	SF145N
Polyethersulfone (PES), Prefilter	0.45µm	25 mm.	SF145E

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Wet Chemistry: Syringe Filters

25mm Syringe Filters with Prefilter. continued

Polyvinylidene fluoride (PVDF), Prefilter	0.45µm	25 mm.	SF145V
PTFE, Prefilter	0.45µm	25 mm.	SF145T
Polyethersulfone with Teflon Prefilter	0.45µm	25 mm.	SF245E

13mm Syringe Filters, Packs of 100

Filter Membrane	Porosity	Size	Catalog #
Nylon	0.22µm	13 mm.	SF122N
PTFE	0.2µm	13 mm.	SF122T
Nylon	0.45µm	13 mm.	SF1345N

Disposable 10mL and 20mL Syringes are compatible with 25mm, 50mm or 13mm syringe filters.

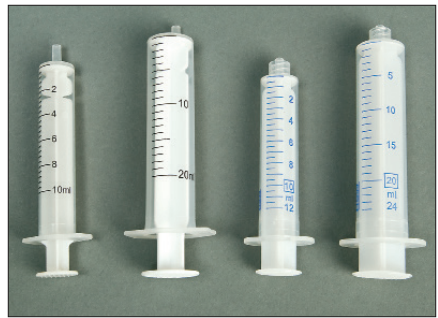
Economical disposable syringes in 10mL or 20mL are made from inert polypropylene. They contain no rubber plungers to degrade or contaminate your sample. Syringes are assembled and feature printed graduations. Slip luer or luer lock styles are available.

Description	Catalog #
10mL Disposable Slip Luer Syringe	S0010
20mL Disposable Slip Luer Syringe	S0020
10mL Disposable Luer Lock Syringe	S0010LL
20mL Disposable Luer Lock Syringe	S0020LL

Filter Membrane Selection Guide

Membrane Type	Membrane Characteristics	Applications	Flow Rate	Hydrophobic	Hydrophilic	Acid Resistant	Base Resistant	Solvent Resistant
Membrane Type: Cellulose Acetate	Characteristics: Low protein binding, ideal for aqueous-based samples	Applications: Tissue culture media filtration, general water filtration.	***	—	****	—	*	**
Membrane Type: Glass Fiber	Characteristics: Larger pore size. Able to remove large particles without clogging.	Applications: General laboratory filtration. Ideal for solids testing.	****	—	****	***	*	****
Membrane Type: Nylon	Characteristics: Hydrophilic membrane and low in extractables. Broad compatibility with aqueous samples. Not highly compatible with acids and bases.	Applications: General laboratory filtration. Ideal for HPLC applications	**	—	****	—	***	***
Membrane Type: Polyethersulfone (PES)	Characteristics: High flow rate compatible with high temperature liquids. Low in inorganic ions.	Applications: Ideal for Ion Chromatography Analysis****	****	—	****	**	***	*
Membrane Type: PVDF	Characteristics: Hydrophilic and has good resistance to solvents.	Applications: General laboratory filtration. Ideal for high protein recovery.	***	*	***	****	****	***
Membrane Type: PTFE	Characteristics: Hydrophobic and resistant to most solvents, acids and bases. Must be pre-wet with alcohol prior to filtering aqueous solutions.	Applications: General laboratory filtration. Ideal for high protein recovery.	**	****	—	****	****	****

**** Each membrane is rated on a scale of 1-4 for fitness for specific properties with 4 being the most effective, 1 being the least and — means not applicable.



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