Thomson SINGLE StEP® Filter Vials

Sample filtration that's economical, eco-friendly, and fast!

- Easy-to-use vials offer fast sample filtration and require only a squeeze of your fingers.
- Color-coded caps allow easy identification of 0.2 µm or 0.45 µm membranes in PVDF, PTFE, PES, or nylon.
- Pre-slit PTFE/silicone caps help eliminate broken autosampler needles and cored septa.
- Low dead volume units feature rugged polypropylene vial and insert with 450 µL loading capacity.
- Fit most standard 12x32 mm autosamplers, including UHPLC instruments.

0.45 µm PES | 0.2 µm PES | 0.45 µm PVDF | 0.2 µm PVDF | 0.45 µm PTFE | 0.2 µm PTFE | 0.45 µm Nylon | 0.2 µm Nylon

Patented Thomson SINGLE StEP® filter vials speed up sample preparation and analysis. The incorporated vial plunger contains an integrated membrane that filters samples with just one squeeze—a SINGLE StEP® process to minimize sample loss while saving time and money.

SINGLE StEP® vials are less cumbersome and safer to use than conventional sample preparation methods. Even with a luer lock syringe and filter, it is difficult to ensure a tight connection and complete sample transfer. At best, some sample remains in the syringe; at worst, the sample ends up on your bench. Avoid these irritating—and potentially hazardous—situations with Thomson SINGLE StEP® filter vials.

By doing away with the syringe and the syringe filter, as well as the time required to perform sample filtration using them, you can cut your sample prep costs in half (Figure 2). Thomson SINGLE StEP® filter vials are also more eco-friendly because there is far less waste, not to mention more space on your bench!

Pre-slit caps ensure a clean, no-hassle aliquot draw, helping eliminate broken needles and cored septa. Thomson SINGLE StEP® filter vials are also compatible with most standard autosamplers, such as Agilent, Shimadzu, and Waters—even UHPLC instrumentation.

Figure 1: The patented design of Thomson SINGLE StEP® filter vials allows you to perform sample clean-up in the same vial that goes into your autosampler.

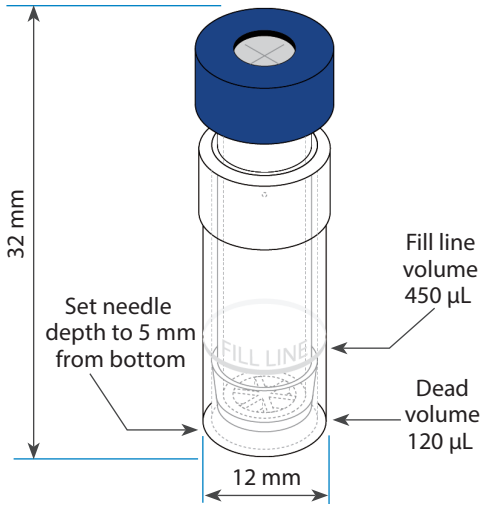

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Table I: Many common drugs and compounds of interest in clinical/toxicology or drinking water samples are compatible with Thomson SINGLE StEP® filter vials.

Drug Name	PVDF 0.2 µm	PES 0.2 µm	PTFE 0.2 µm	PES 0.45 µm	PVDF 0.45 µm
Acebutolol		X			
Acetylsalicylic Acid		X			
Alpha1-Proteinase Inhibitor (Human)					X
Alprenolol		X			
Amiloride		X			
p-Aminobenzoic Acid (PABA)					X
p-Aminosalicylic Acid			X		
Amphotericin B for Injection USP					X
Atenolol		X			
Azathioprine				X	X
Azodicarbonamide		X			
Bleomycin Sulfate			X		
Caffeine		X			
Cetirizine				X	X
Chlorothiazide		X			
Chloramphenicol		X			
Cimetidine		X			
Ciprofloxacin		X			
Cisplatin, Cisplatin Injection			X		
Cyclosporine A	X				
Cytarabine			X		
Daunorubicin			X		
DE-310		X			
Diclofenac					X
Enalapril		X			
Ethionamide			X		
Factor IX Complex Heat-Treated					X
5-Fluorouracil			X		
(18F) Fluoromisondazole, Misiomidazole	X				
Gatifloxacin				X	X
Hydrochlorothiazide		X			
Ibuprofen				X	X
Iosniazid			X		

Drug Name	PVDF 0.2 µm	PES 0.2 µm	PTFE 0.2 µm	PES 0.45 µm	PVDF 0.45 µm
Isonicotinic Acid			X		
Ketamine		X			
Las 35917					X
Levofloxacin				X	X
Lomefloxacin				X	X
Methyl Gag; NSC-32946			X		
Metoprolol		X			
Mitomycin			X		
Morphazinamide			X		
Nadolol		X			
Nicotinic Acid			X		
Paclitaxel	X				
Pefloxacin				X	X
Pentoxifylline (PTX)	X				
Phenytoin					X
Pyrazinamide			X		
Pyrimethamine				X	X
Ranitidine		X			
Rifampicin				X	X
Sabeluzole					X
Streptokinase					X
Sulfadozine					X
Sulphasalazine		X			
Sulpiride		X			
Terbutaline		X			
Thiotepa Parenteral Sterile			X		
Timolol		X			
Tobramycin Vincristine Sulfate			X		
Tranexamic Acid		X			
Triamcinolone Acetonide		X			
Triazinate; NSC-139105			X		
Tropicamide				X	
Vinblastine Sulfate			X		

For a complete list of references showing the successful use of Thomson SINGLE StEP® vials in the above applications, visit **http://htslabs.com/techcenter/filtration/compound-index/index.php#1**

Figure 2: Thomson SINGLE StEP® filter vials are an economical alternative when compared to material and time costs of conventional filtration.

Vial	$0.30	Filter Vial	$2.20
Cap	$0.30		
Syringe	$0.20		
Syringe Filter	$1.25		
Labor* (3 min)	$1.25	Labor* (15 sec)	$0.10
Total	**$3.30**	**Total**	**$2.30**

*Calculated based on a $25/hour labor rate.

Table II: Easily choose your vial based on the class of compound you will be working with.

Membrane	Properties	Compound Class	Incompatible With
Nylon	hydrophilic, low protein binding	bases, HPLC solvents, alcohols, aromatic hydrocarbons	acids, aggressive halogenated hydrocarbons, proteins
PES	hydrophilic, low protein binding, fast flow rates	filtration of buffers & culture media	—
PVDF	hydrophilic, low protein binding	alcohols, biomolecules	bases, esters, ethers, ketones
PTFE	hydrophobic	organic solvents, acids, alcohols, bases, aromatics	aqueous samples without pre-wetting (to avoid high backpressure)

Nylon, PES, PVDF—hydrophilic applications; PTFE—hydrophobic applications
*For detailed compatibility, see Table III

Dirty samples and complex matrices can cause interference and make quantification difficult. SINGLE StEP® vials alleviate matrix challenges, making them ideal for clinical, environmental, food safety, and other labs! As demonstrated in Tables I–III, they are also compatible with a wide variety of solvents, mobile phases, and compounds of interest.

After using Thomson SINGLE StEP® filter vials themselves, Restek's technical experts are certain that you'll find them to be a convenient and worthy replacement to your current sample filtration technique. Free sample 5-packs are avaiable for your evaluation—simply add "-247" to any cat.#. Contact Restek Customer Service or your local Restek representative today!

Table III: Most solvents and mobile phases used in liquid chromatography are also compatible with SINGLE StEP® filter vials.

Solvent / Mobile Phase	HOUSINGS	FILTERS			
	PP (polypropylene)	PTFE (polytetrafluoroethylene)	PVDF (polyvinylidene fluoride)	PES (polyether sulfone)	NYL (nylon)
Acetic Acid (glacial) *acid, organic*	TST	R	R	R	NR
Acetone *ketone*	R	R	NR	NR	R
Acetonitrile (ACN) *nitrile*	R	R	TST	NR	R
Alconox, 1% *surfactant/detergent*	TST	TST	TST	TST	TST
Ammonium Hydroxide *caustic*	TST	R	R	NR	TST
Ammonium Sulfate (saturated) *salt, aqueous solution*	R	R	NR	TST	R
Amyl Acetate *ester*	TST	R	R	R	TST
Amyl Alcohol *alcohol*	R	R	R	R	TST
Benzene *HC, aromatic*	NR	R	R	NR	R
Benzyl Alcohol *HC aromatic/alcohol*	NR	R	R	TST	TST
Boric Acid (aqueous solution) *acid, inorganic*	R	R	TST	R	R
Butyl Acetate *ester*	TST	R	TST	NR	R
Butyl Alcohol *alcohol*	R	R	R	R	R
Carbon Tetrachloride *HC, halogenated*	NR	R	R	NR	TST
Cellosolve (ethyl) *glycol ether*	R	R	TST	R	R
CHAPS (aqueous solution) *surfactant/detergent*	TST	TST	TST	TST	TST
Chloroform *HC, halogenated*	NR	R	R	NR	NR
Cyclohexanone *ketone*	NR	R	NR	NR	R
Diethyl Pyrocarbonate, 0.2% *carboxylic anhydride*	TST	TST	TST	TST	TST
Dimethyl Sulfoxide (DMSO) *sulfoxide*	R	R	NR	NR	R
Dimethylacetamide *amide*	R	R	NR	NR	NR
Dimethylformamide *amide*	R	R	NR	TST	R
Dioxane *ether*	R	R	R	TST	R
Ethers *ether*	NR	R	R	TST	R
Ethyl Acetate *ester*	TST	R	R	NR	R
Ethyl Alcohol *alcohol*	R	R	R	R	TST
Ethylene Glycol *glycol*	R	R	R	R	R
Formaldehyde *aldehyde*	R	R	R	TST	R
Formic Acid, 50% *acid, organic*	R	R	R	TST	NR
Freon® (TF or PCA) *HC, halogenated*	R	R	R	TST	R
Gasoline *HC*	NR	R	R	R	R
Glycerine (Glycerol) *glycol*	R	R	R	R	R
Guanidine Hydrochloride, 6M *salt, aqueous solution*	TST	R	TST	TST	TST
Guanidine Thiocyanate, 5M *salt, aqueous solution*	TST	R	TST	TST	TST
Helium *gas*	R	R	TST	TST	R
Hexane *HC, aliphatic*	NR	R	R	R	R
Hydrochloric Acid, 1N (HCL) *acid, inorganic*	R	R	R	R	R
Hydrochloric Acid, 6N (HCL) *acid, inorganic*	TST	R	TST	R	TST
Hydrochloric Acid, conc. (HCL) *acid, inorganic*	NR	R	NR	TST	NR
Hydrofluoric Acid *acid, inorganic*	NR	R	NR	NR	NR
Hydrogen *gas*	R	R	R	TST	R
Hydrogen Peroxide, 3% *peroxide*	R	R	R	TST	R
Hydrogen Peroxide, 30% *peroxide*	TST	R	R	TST	TST
Hydrogen Peroxide, 90% *peroxide*	R	R	R	TST	NR
HYPO (aqueous solution) *salt, aqueous solution*	R	R	R	TST	R
Isobutyl Alcohol *alcohol*	R	R	R	R	TST
Isopropyl Acetate *ester*	TST	R	R	NR	R
Isopropyl Alcohol *alcohol*	R	R	R	R	TST
Kerosene *HC*	TST	TST	R	R	R
Lactic Acid, 50% *acid, organic/alcohol*	R	R	TST	TST	TST
Lubrol PX (aqueous solution) *surfactant/detergent*	TST	TST	TST	TST	TST
Methyl Ethyl Ketone (MEK) *ketone*	R	R	NR	NR	R
Mercaptoethanol, 0.1M *alcohol/mercaptan*	TST	TST	TST	TST	TST
Methyl Acetate *ester*	TST	R	NR	NR	R
Methyl Alcohol *alcohol*	R	R	R	R	TST
Methylene Chloride *HC, halogenated*	NR	R	NR	NR	TST
Methyl Isobutyl Ketone (MIBK) *ketone*	NR	R	NR	NR	R
Mineral Spirits *HC*	NR	R	R	R	R
Nitric Acid, 6N *acid, inorganic*	TST	R	R	R	NR
Nitric Acid (concentrated) *acid, inorganic*	NR	TST	NR	TST	NR
Nitrobenzene *HC, aromatic*	NR	R	R	TST	R
Nitrogen *gas*	TST	R	R	TST	R
Nonidet-P40 (aqueous solution) *surfactant/detergent*	TST	TST	TST	TST	TST
Ozone *gas*	NR	R	R	TST	NR
Paraldehyde *aldehyde*	TST	R	TST	TST	R
Pentane *HC, aliphatic*	NR	R	R	R	R
Petroleum Ether *ether*	TST	R	R	TST	R
Phenol (aqueous solution) *phenol*	NR	R	R	TST	NR
Potassium Hydroxide, 3N *caustic*	R	R	R	TST	R
Pyridine *amine*	R	R	NR	NR	TST
Silicone Oils *silicone*	R	R	R	TST	R
Sodium Carbonate (aqueous solution) *salt, aqueous solution*	R	R	R	TST	TST
Sodium Chloride (aqueous solution) *salt, aqueous solution*	R	R	R	TST	R
Sodium Dodecyl Sulfate *surfactant/detergent*	TST	TST	TST	TST	TST
Sodium Hydroxide, 3N *caustic*	R	R	R	R	R
Sodium Hydroxide (concentrated) *caustic*	R	R	R	R	NR
Sulfuric Acid (concentrated) *acid, inorganic*	NR	R	TST	NR	NR
TCA (aqueous solution) *acid, organic*	R	R	R	TST	TST
Tetrahydrofuran (THF) *ether*	NR	R	NR	TST	R
Toluene *HC, aromatic*	NR	R	R	R	R
Trichloroethane *HC, halogenated*	NR	R	TST	NR	TST
Trichloroethylene *HC, halogenated*	NR	R	R	NR	TST
Tween 20 (aqueous solution) *surfactant/detergent*	TST	R	TST	TST	TST
Urea, 8M *salt, aqueous solution*	R	R	R	TST	R
Water (Brine) *salt, aqueous solution*	R	R	R	TST	R
Xylene *HC, aromatic*	NR	R	R	TST	R

R = recommended NR = not recommended TST = testing recommended; limited or no data available

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- Color-coded caps allow easy identification of 0.2 µm or 0.45 µm membranes in PVDF, PTFE, PES, or nylon.
- Pre-slit PTFE/silicone caps help eliminate broken autosampler needles and cored septa.
- Low dead volume units feature rugged polypropylene vial and insert with 450 µL loading capacity.
- Fit most standard 12x32 mm autosamplers, including UHPLC instruments.

Simply squeeze particulates and contaminants out of your sample!

Porosity	Color	qty.	cat.#
Nylon			
0.2 µm	black cap	100-pk.	25891
0.45 µm	pink cap	100-pk.	25892
PES (polyethersulfone)			
0.2 µm	grey cap	100-pk.	25897
0.45 µm	orange cap	100-pk.	25898
PTFE (polytetrafluoroethylene)			
0.2 µm	green cap	100-pk.	25893
0.45 µm	blue cap	100-pk.	25894
PVDF (polyvinyldifluoride)			
0.2 µm	red cap	100-pk.	25895
0.45 µm	yellow cap	100-pk.	25896

Patent No. 7,790,117

Free Sample 5-Packs available! Simply add "-247" to any cat.#.

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Pure Chromatography

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