THOMSON INSTRUMENT COMPANY Solutions ™ At Work

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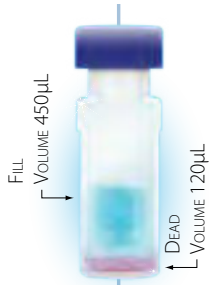
Filter Vial CATALOG APPLICATION NOTES

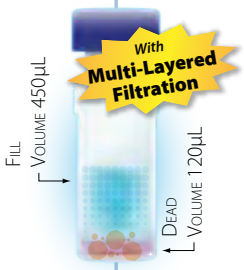
Standard **Filter Vial™** Patented



Standard For Most Samples

eXtreme/FV® Patented

With **Multi-Layered Filtration**



For Particulate Laden Samples

nano Filter Vial™ Patented

When Every µL Counts

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THOMSON MADE IN USA

Local Distributor

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Tel: 01494 563377 | Fax: 01494 564990
sales@thamesrestek.co.uk | www.ThamesRestek.co.uk

THAMES RESTEK UK LIMITED

SERVICE WITH EXPERIENCE

Original release 2014
version 1.0.0

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Filter Vial Overview

Thomson Filter Vials (patented) are a single system which replaces HPLC Vials, HPLC Caps, Syringes, & Syringe Filters for the filtration of samples. In 15 seconds, Filter Vials allow for Sample Preparation of unfiltered samples to filtered samples in an autosampler ready vial. The filter vial consists of two parts: a filter vial shell and a plunger which includes a filter on one end and a vial cap on the other end. Samples are filtered by pipetting the sample into the filter vial shell, inserting the plunger into the shell, and then pushing the plunger into the shell.

Thomson Filter Vials simplify general filtration by replacing syringes & syringe filters, centrifuging spin columns and/or liquid-liquid extractions.

Applications for Thomson Filter Vials include all sample types to be analyzed by HPLC, UHPLC, LC-MS and GC-MS.

Filter Vial

Max Fill Vol.	*450µL*
Dead Vol.	*120µL*

Standard Filter Vials *(120µL Dead Volume)*

Thomson Standard Filter *(patented)* can be used for samples containing less than 10% solid particulates. The filter vial consists of two parts: a filter vial shell and a plunger which includes a single layer filter on one end and a vial cap on the other end.

Applications for Thomson Standard Filter Vials include filtration of catalysts from organic and medicinal chemistry synthesis reactions, saccharide analysis in corn syrup, and in-vial protein precipitation.

eXtreme|FV®

Max Fill Vol.	*450µL*
Dead Vol.	*120µL*

eXtreme|FV® *(Multi-Layered Filtration)*

Thomson eXtreme|FV® *(patented)* offer multi-layer filtration for viscous samples and samples containing up to 30% solid particulates. The filter vial consists of two parts: a filter vial shell and a plunger which includes a multi-layer filter on one end and a vial cap on the other end.

eXtreme|FV® allow for compounds to be separated from the matrix which, results in both a higher signal to noise ratio and peaks that are more differentiated.

Prior to the introduction of the eXtreme|FV®, many samples containing high levels of particulates were "filtered" by using an SPE step in the method. These methods are readily amendable to the replacement of the SPE step using a rapid and lower cost eXtreme|FV® step.

Applications for Thomson eXtreme|FV® include filtration of cell and cell debris from cell culture; pesticide analysis in food, tissue, soil, and water; and toxicology analysis in blood and urine.

nano|Filter Vial™

Max Fill Vol.	*250µL*
Min Fill Vol.	*10µL (for 2µL injection)*

nano|Filter Vials™ *(10µL Minimum Volume)*

Thomson nano|Filter Vials™ offer a very low dead volume allowing one to filter as little as 10µL of sample with enough remaining filtrate to make a 2µL injection. The filter vial consists of two parts: a filter vial shell with mating bottom surface and a plunger which includes a filter on one end and a screw cap vial on the other end.

Applications include the analysis of enzymes, peptides, DNA, RNA, synthesis reaction intermediates, finished products, saliva, samples available in low volumes, in-vial evaporation and re-suspension for sample concentration and buffer/solvent change.

Application Selection

See our Technical Library for more Applications
htslabs.com

	nano|FV™	nano|FV™ *Pre-Slit Cap*	Standard Filter Vial	Low Evaporation	eXtreme|FV®
10µL-100µL	●	●			
120µL-450µL			●	●	●
UPLC Compatible	●	●	●	●	●
GCMS Compatible	●			●	
≤ 30% Solids					●
Viscous		●			●
Replacement for SPE					●
General Liquids < 10% solids	●	●	●	●	●
Cell Fermentation	●	●	●	●	●
Particulate Removal	●	●	●	●	●
Automation Compatible	●	●	●	●	●
Small Molecules	●	●	●	●	●
Food & Supplements			●	●	●
Toxicology	●	●	●	●	●
Pesticides	●	●	●	●	●
Environmental	●	●	●	●	●
Sterile Testing	●				

Filter Vial Membrane Material

The recommended membrane for sample filtration is based on the percentage of organic solvent in the sample and the amount of protein binding.

	AQUEOUS	ORGANIC	LOW PROTEIN BINDING
PTFE			
PVDF			
Nylon			
PES			

Filter Vial Membrane Pore Size

The recommended membrane pore size for sample filtration is based on the cell or cell debris content of the sample and the particle size of the packing material in the chromatography column used to analyze the sample. If the sample contains cells or cellular debris, then a 0.2µm pore size membrane is recommended to maintain system sterility.

	Cells or Cell Debris in Sample	Chromatography Column Particle Size <3µm	Chromatography Column Particle Size >3µm
0.2µm Pore Size			
0.45µm Pore Size			

Filter Vial Leachables

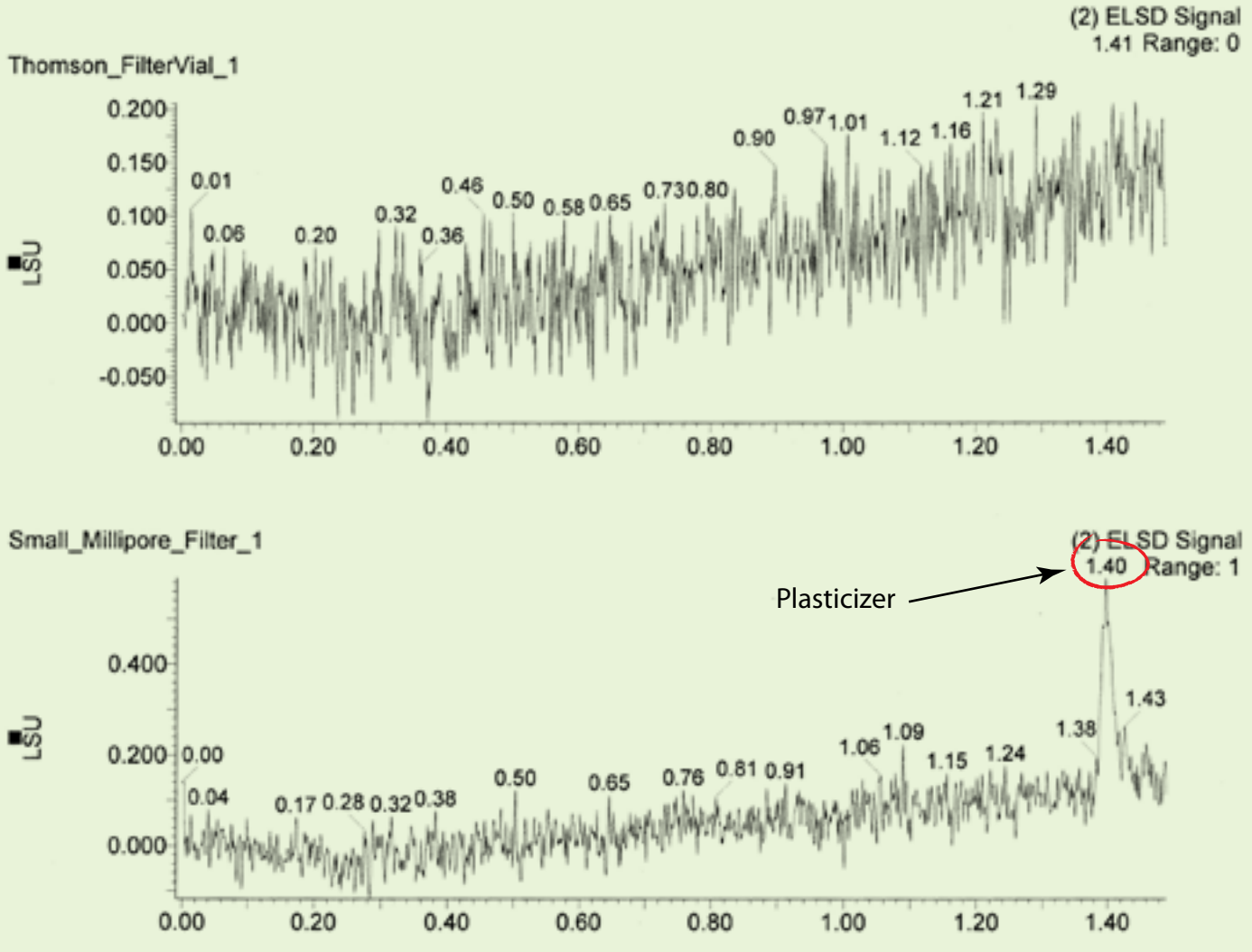
Thomson Filter Vials are manufactured without the use of plastizers or mold release agents making them LC/MS clean.

Testing with ELSD, PDA, and MS detection by Takeda Pharmaceutical showed no leaching from Thomson Standard Filter Vial with a 0.45um, PTFE membrane compared to significant leaching from Millipore Millex-FH® Filter, 0.45µM, hydrophobic PTFE, 4mm.

Method: A. Water B. ACN 45-90% with .05% TFA Ballistic Gradient over 1.4 minutes using Waters® Acquity® UPLC Thomson Filter Vial (patented) Part # 35540-500 Filter Vial 0.45µM hydrophobic PTFE, w/ Pre-Slit Cap Millipore Syringe Filter Part #:SLFHR04NL Millex-FH® Filter, 0.45µM, hydrophobic PTFE, 4mm, non-sterile

Plasticizer Leachable

Testing by Takeda® Mass Spec. ES+ Data



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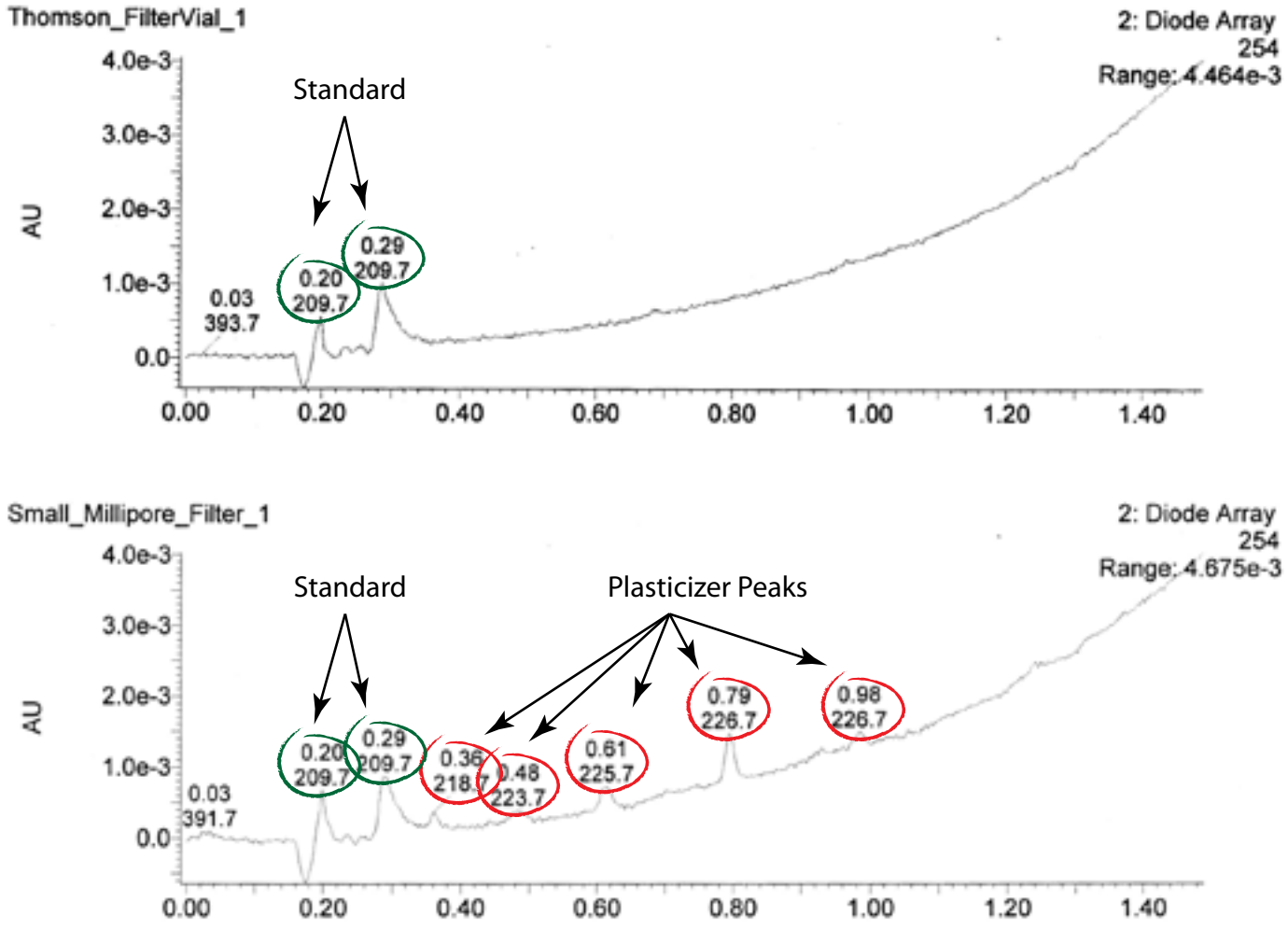
Plasticizer Leachable

Testing by Takeda® UV Data



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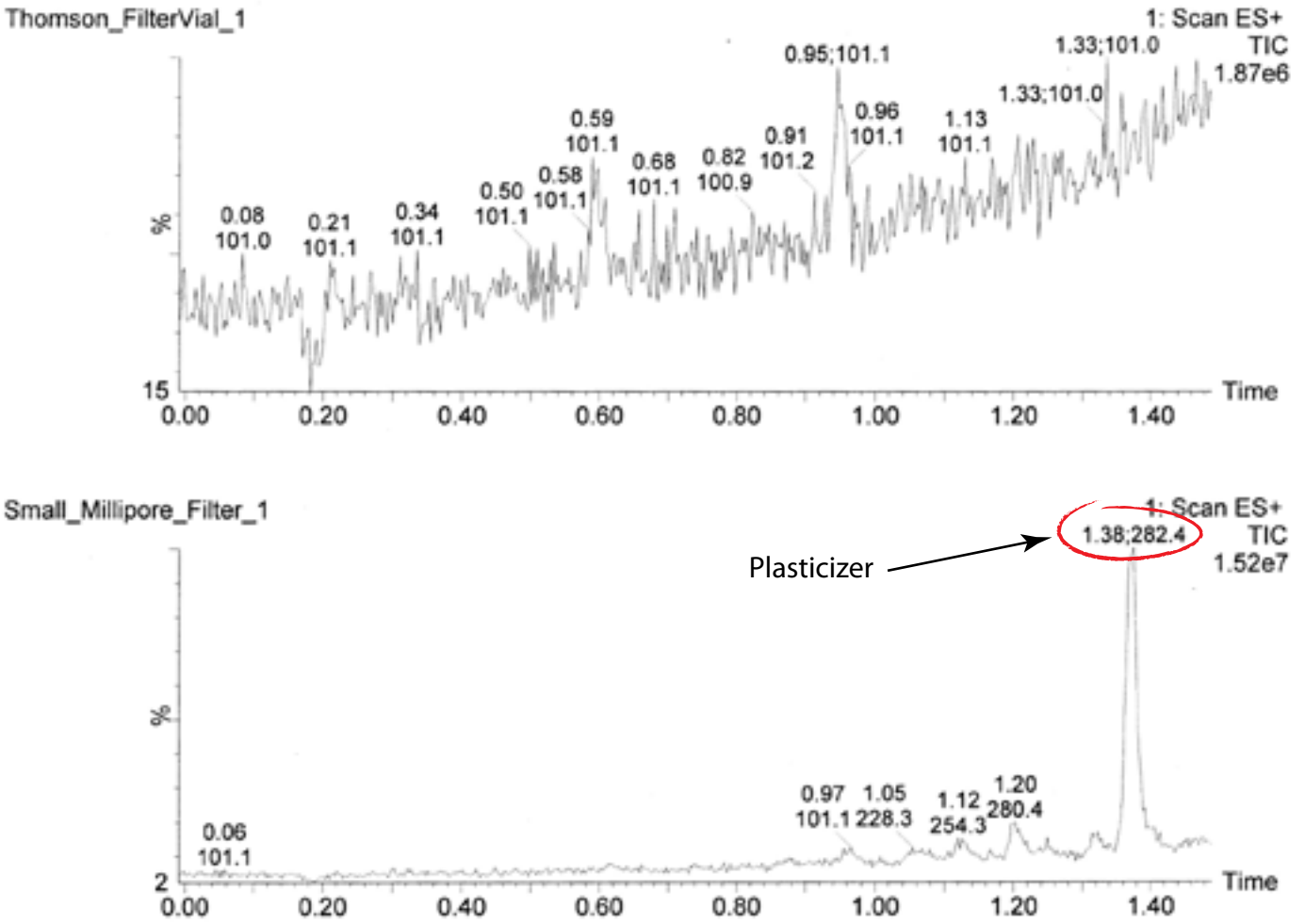
Plasticizer Leachable

Testing by Takeda® Mass Spec ES+ Data Part 2



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