

RETHINK.



A New Way to Think About Vessels for PCR



Resize.

UTW™ Vessels

UTW Visual Comparison



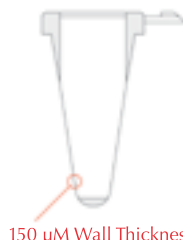
UTW

3 Competitor Plates

UTW well walls are much thinner and remarkably concentric. Two wells from various 96-well microplates were cut to reveal a cross-sectional view of the walls. Note the non-uniform (as indicated by arrows) and thick walls of the competitor “thin-walled” plates.

For years, traditional thin-walled PCR vessels have been used with conventional PCR systems – limiting the overall performance of such systems. Finnzymes now offers an integrated solution to high performance PCR that includes thermal cycling instruments, PCR vessels and highly processive polymerases. Our integrated solution begins with new **ultra-thin walled tubes and plates**, one key element to **speedy PCR protocols**.

Cross Section of Ultra-thin Wall Tube



Ultra-thin walled, or **UTW™**, PCR tubes and plates are manufactured utilizing a patent-pending process for molding polypropylene vessels with walls that are 2x thinner than conventional thin-walled tubes. This process provides near-perfect concentricity of the inner and outer walls, and uncommonly uniform thinness from well-to-well. Our line of UTW vessels have **walls**

that are 0.15 mm thin where it matters most – at the contact point between the thermal cycler block and the PCR sample.

Thermal Response of Sample in UTW Tube



Ultra-thin walls provide speedier thermal responses of PCR samples. A 30 µl sample in either a 0.2 ml conventional thin-walled tube (red) or a UTW tube (blue) was quickly cycled and the thermal profiles of the samples were measured using a tiny, calibrated thermistor. The conventional tubes cause the sample to lag by more than 5°C and 10 s (never achieving programmed temperature even after 15 s).

Thinner walls offer less thermal resistance for transferring heat from the thermal cycler block to the sample within the tube. More thermally responsive UTW vessels allow for greater speeds when married with a high speed thermal cycler. The Piko™ thermal cycler and 0.2 ml UTW tubes deliver 250% the speed of conventional cyclers and tubes – **completing PCR protocols in less than ten minutes!**

• *Half the thickness* • *Twice the speed* •

Reformat.

Slidetiter™ Plates



Slidetiter™ describes a family of novel PCR plates in which a standard microplate is divided into four smaller plates, each the footprint of a microscope slide. We have not only **shrunk the size of the plate**, but dramatically **reduced the thickness of the walls** by utilizing the UTW molding process. Slidetiter plates are offered in 24-well and 96-well capacities, but at a quarter the size and half the price of conventional microplates.

The transition to working with Slidetiter plates in a conventional lab setting is seamless. The well spacing of our plates is based on the ubiquitous standard of 9 mm center-to-center pitch common to microplates. In addition, we have molded an optional frame complying with the standard dimensions of microplates, into which up to four Slidetiter plates may be easily inserted. This assembly allows our plates to be loaded by common multi-channel pipettors or state of the art liquid handlers, and also makes Slidetiter plates **compatible with a wide array of conventional lab equipment** and analysis instrumentation.



The Slidetiter line of products also affords considerable savings by using lower volumes as compared with conventional microplates. Our UTW strip tubes and 24-well Slidetiter plates allow for as little as 5 μ l or as much as 50 μ l reaction volumes. Remarkably, a 96-well Slidetiter plate **exhibits less than 2% sample loss with a starting reaction volume of 10 μ l**, even after strenuous cycling regimes. All our vessels are designed to work with a multitude of sealing films and caps when used in conjunction with a Piko™ PCR machine.

- *Half the price*
- *Quarter the size*
- *Full compatibility*

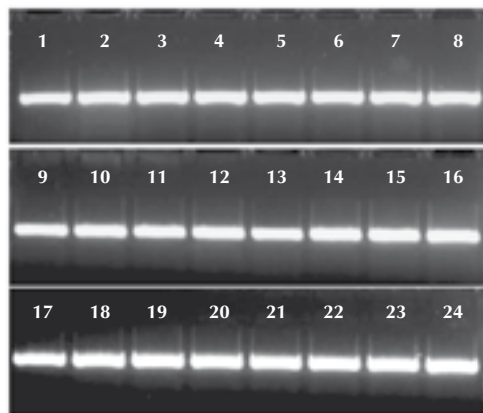
Reality.

An Integrated Solution

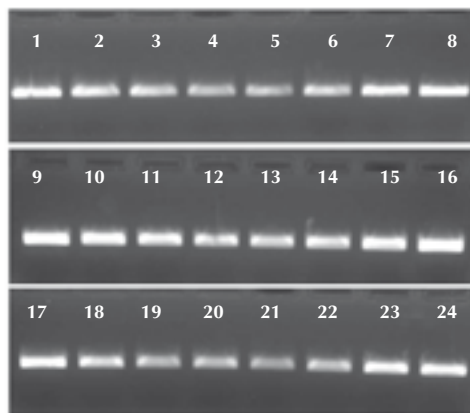
High performance PCR requires a highly-tuned combination of ultra-thin walled vessels, fast PCR mixes and a super-speedy PCR machine. Compromising any one of these components will ultimately deteriorate the PCR results. Finnzymes is the first company to offer this complete system. And at dramatically **reduced reaction volumes, costs, and protocol times**, your high performance PCR choice is made simple.

High Performance PCR in Different Tube Types

Phusion + Piko + UTW



Phusion + Piko + Competitor Fast Tube



UTW vessels provide optimal results on a Piko thermal cycler and using Phusion™ DNA Polymerase from Finnzymes.

This side-by-side comparison clearly demonstrates better yields and more consistent results when using UTW tubes. An identical 2-step ultra-fast PCR was performed on a Piko 24-well cycler using either UTW tubes or a competitor's fast tubes. PCR samples derived from each of the 24-wells were run on an agarose gel revealing the 400 bp product was specifically amplified, albeit at variable and lower efficiencies for the "competitor fast tube" samples (see lanes 3 – 6, 12 – 14, and 19 – 22).

All of our UTW and Slidetiter vessels come in a wide variety of formats and colors – please visit our web site at www.finnzymes.com for a complete listing of product numbers, pricing and additional product information.

Slidetiter, Piko and Phusion are trademarks of Finnzymes Oy or its affiliates.

UTW is a trademark of BioInnovations Oy.

Purchase of this instrument conveys a limited non-transferable immunity from suit for the purchaser's own internal research and development and applied fields other than human in vitro diagnostics under non-real-time thermal cycler patents of Applera Corporation.



TOOLS FOR MOLECULAR BIOLOGY

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