

Performance of Thermo Scientific Nunc Aluminum Sealing Tapes in Thermocycling and Frozen Storage Applications

When performing PCR, the concentration of salts is critical to the efficiency and accuracy of the results. Once reaction conditions have been optimized, the salt concentration can change due to water evaporation during thermocycling or temporary storage of materials in an ultra-low temperature freezer. In order to ensure the fidelity of your results, it is important that the reaction vessel used be designed to keep evaporation to an absolute minimum.

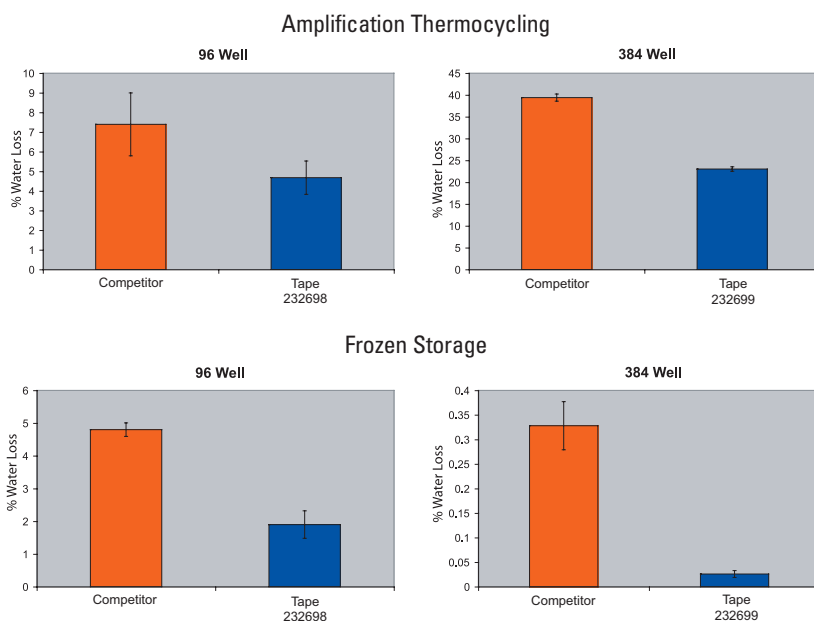
Thermo Scientific Nunc aluminum sealing tapes were compared to a competitor's aluminum sealing tapes for their ability to resist water loss during thermocycling and short-term freezer storage in 96 and 384 well plates.

Thermocycling and Frozen Storage

Wells were filled with either 50 μL dH₂O (96) or 25 μL (384), sealed with aluminum sealing tape, weighed to the nearest milligram, and cycled 25X (94°C 2 min., 55°C 2 min., 72°C 3 min.). After 25 cycles, the plates (n=5) were removed and weighed again to determine water loss. Water loss was calculated as a percent of the weight of water added to the plate. To determine water loss during temporary frozen storage, plates were filled, sealed, and weighed as above and placed at -40°C for seven days. After seven days the plates were re-weighed, and water loss was calculated as a percent of the weight of water added to the plate.

Conclusions

Compared to a competitor's sealing tapes, our sealing technology reduces water loss during both thermocycling and frozen storage in 96 and 384 well amplification plates. Therefore, users should experience greater assay condition stability and sample recovery through a typical thermocycling program using Thermo Scientific Nunc aluminum sealing tapes.



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