

Frozen Temperature Stability Testing: UltraSnap ATP Test Devices

Objective: Analyze stability of UltraSnap ATP test devices after repeated exposure to frozen temperatures (-20 °C).

Method: The performance of UltraSnap ATP test devices was measured at regular intervals between several freeze/thaw cycles (24 hours at -20 °C followed by 24 hours at 2 – 8 °C). ATP solution was added to 5 replicate devices after each freeze/thaw cycle and results compared to control devices (never frozen). Control result is normalized to 100% - results of replicate tests are expressed as a percent of control.

Table 1: UltraSnap RLU Results after 10 Freeze/Thaw Cycles (5 replicates)

Freeze/Thaw Cycles	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean RLU
0 – Control	100%	100%	100%	100%	100%	100%
1	100%	95%	99%	101%	94%	98%
2	96%	96%	93%	99%	92%	95%
3	97%	96%	90%	94%	94%	94%
4	95%	95%	95%	99%	90%	95%
5	97%	91%	92%	93%	90%	93%
6	97%	94%	92%	90%	92%	93%
7	92%	91%	95%	93%	91%	92%
8	92%	90%	92%	98%	90%	92%
9	92%	91%	92%	94%	90%	92%
10	94%	94%	88%	95%	90%	92%

Conclusion: Repeated exposure of UltraSnap test devices to freezing temperatures has no significant impact on test device performance. Hygiena recommends exposing UltraSnap ATP test devices to no more than 4 freeze/thaw cycles to keep test device performance >95%. Allowing test devices to acclimate to room temperature before testing begins is recommended for optimal test performance.