

Improved sealing surface of PCR plates from BRAND® to support reliable evaporation protection



Introduction

The selection of proper material and surface finishing have an important influence on the sealing properties of PCR plates. Its not only important to select quality sealing films but considering PCR plate design also can improve results for sample recovery during PCR. Design features such as a planar surface, and uniform plate and well thickness are essential for proper sealing and to the minimization of evaporative losses. In addition, the improved adhesion of sealing films support the sample preservation.

This technical note compares the attachment qualities of the Real-Time PCR sealing film (Cat. No. 7813 91) with corresponding PCR plates of several suppliers with different physical characteristics.

Material & Methods

■ Devices

- Thermocycler Biometra T1
- Transferrpette® S (Cat. No. 7047 78)
- BRAND qPCR self-adhesive sealing film (Cat. No. 7813 91)
- Pipette tips 200 µl (Cat. No. 7320 08)
- TipBox (Cat. No. 7322 08)
- Roller (Cat. No. 7013 80)
- Reagent reservoir (Cat. No. 7034 59)

■ PCR plate options

- BRAND PCR plate Cat. No. 7813 75
- PCR plate competitor 1
- PCR plate competitor 2
- PCR plate competitor 3

■ Chemicals reagents

- Distilled water (10 ml [50 µl each well]),
- cationic dye methylene blue

Measurement of evaporation losses of PCR plates sealed with self-adhesive sealing film (Cat. No. 7813 91)

A mixture of water with the cationic dye methylene blue was prepared. In each PCR plate every well was filled with 50 µl of the water dye mixture and sealed with the adhesive sealing film. The weighed portion of the plates and the sealing films was determined before and after the filling of the wells. The roller was used to ensure a firm seal. The PCR plates were then put into the thermal cycler Biometra T1 and a PCR run was performed (table 1).

Temperatures and times during the thermal cycler process (table 1)

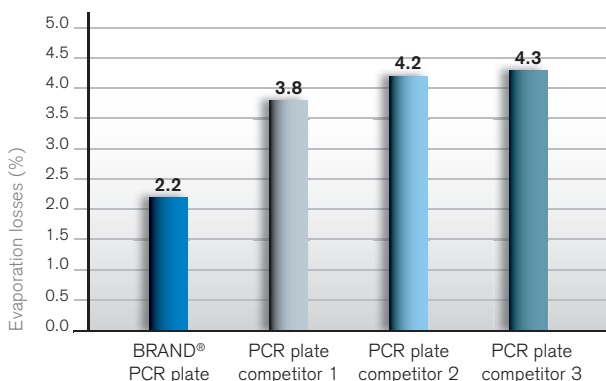
Temperature	Time
94 °C	3 min
94 °C	30 sec
50 °C	30 sec
72 °C	30 sec
72 °C	10 min

} 25 x

Finally the PCR plates were reweighed to determine evaporative losses.

Analysis and Results

Evaporation losses of different PCR plates during PCR, sealed with adhesive sealing film (fig. 1):



Conclusion

These results show that beside using a proper sealing film, the design of the PCR plate also contributes to reliable evaporation protection. The texture of the material and the very planar surface of PCR plates from BRAND facilitate PCR passes with minimal evaporation losses (fig. 1).

