

Microseal® 'A' Sealing Film

for PCR Plates and Tubes

Microseal 'A' film (US patent 5,721,136) provides tight sealing and smooth, aerosol-free release for a broad range of applications, including low-volume PCR (down to 5 µl in 384-well plates*, or 10 µl in 96-well plates). The compliant sealing surface conforms tightly to most vessels, from rimless polycarbonate plates to vessels with irregular surfaces. When used in cyclers with heated lids, this silicone-based seal eliminates the need for a wax or oil overlay. A liner, removed just before use, keeps the sealing surface pristine. After cycling, the nonadhesive film releases smoothly, minimizing aerosol formation and the chance of cross-contamination. Microseal 'A' film seals every PCR vessel offered by Bio-Rad Laboratories.

Note: This seal is not designed for cold storage or for optical use. Do not use Microseal 'A' film in real-time instruments, including DNA Engine Opticon® and Chromo4™ systems.

Directions for Use:

1. Place the sample vessel in the cycler block. (If performing a hot-start reaction, preheat the sample block, allow samples to warm 5–15 sec, and add the final reaction component before sealing.)
2. Remove the light-pink release liner to expose the silicone sealing surface. Do not remove the printed backing. Immediately place the film on the vessel, with the compressible silicone side down and the printed backing facing up.
3. Firmly seat film on the reaction vessel. For quick, uniform sealing, use 1–2 passes of the sealing roller — press firmly, moving from the center of the plate outwards, and then around all four edges. If using fingertip pressure, be sure to firmly press the film over each well.
4. Close the heated lid and apply pressure. When using MJ thermal cyclers with adjustable heated lids, turn the thumbwheel until the lid contacts the plate — when an increase in resistance is first felt. Continue to turn the thumbwheel about 3/4 turn past the point of first contact (1/4 of the thumbwheel circumference is visible, so three passes of the visible portion equals 3/4 turn). When using semi-skirted plates or cyclers with nonadjustable lids, use an adaptor plate to ensure sufficient sealing pressure (see below).
5. After cycling, allow the sealed vessel to cool for a few minutes, then slowly remove the film. Pronounced dimples indicate proper sealing.
6. Troubleshooting: If sealing failures occur, increase the lid pressure slightly. If failures continue, ensure that the film is seated thoroughly on each well. Seating film with a hard roller may cause film cutouts to remain in wells after film removal — only use soft rollers such as MSR-0001. If cutouts still occur, cool sealed plate for an additional 5 min before removing the film.

Microseal 'A' sealing film

MSA-1001 50 sheets per package

Related Products

MSR-0001	Sealing roller	Quickly and uniformly presses seal over PCR-plate wells
ADR-0103	3 mm adaptor plate	Use when sealing MLP-series PCR plates or TBS-series tube strips in a PTC-100® cycler with a nonadjustable lid, or when sealing MSS-series PCR plates in any cycler
ADR-0110	10 mm adaptor plate	Use when sealing MLL-, MSP-, or HSP-series PCR plates or TLS-series tube strips in a PTC-100 cycler with a non-adjustable lid

* Reliable cycling of substantially smaller volumes has been demonstrated with 384-well Hard-Shell® plates using high-pressure



Sealing Comparison Chart

Product	Product Highlights	Compatibility
Microseal® 'A' film MSA-5001 (50 sheets)	<ul style="list-style-type: none"> • Smooth application and release — no aerosol generation • Peel-away release liner for pristine sealing surface • PCR volumes $\geq 10 \mu\text{l}$ (96-well) or $\geq 5 \mu\text{l}$ (384-well) 	All PCR plates, tube strips
Microseal 'B' adhesive seals MSB-1001 (100 sheets)	<ul style="list-style-type: none"> • Clear, adhesive seal for thermal cycling or fluorescent assays • Plate storage or transport before or after cycling (ambient to -40°C) • PCR volumes $\geq 10 \mu\text{l}$ (96-well) or $\geq 5 \mu\text{l}$ (384-well) 	All polypropylene PCR plates
Microseal 'F' foil MSF-1001 (100 sheets)	<ul style="list-style-type: none"> • Foil can be pierced for sample recovery • Plate storage (ambient to -70°C) • PCR volumes $\geq 25 \mu\text{l}$ (96-well) or $\geq 5 \mu\text{l}$ (384-well) 	All PCR plates

Microseal 'A' Film Effectively Seals the Following Vessels

Product	PCR Volumes	Product Highlights
Microseal semi-skirted 96-well PCR plates MSS-series	5–125 μl	<ul style="list-style-type: none"> • Semi-skirt design adds stiffness and extra labeling surface • Compatible with instruments limited to full-height vessels (e.g., ABI cyclers and sequencers)
Microseal skirted 96- and 384-well PCR plates MSP-series	5–125 μl (96-well) 5–25 μl (384-well)	<ul style="list-style-type: none"> • High-throughput robot-friendly design in 1 component, thin-wall polypropylene • 96-well format is compatible with DNA Engine Opticon® real-time PCR detection systems
Hard-Shell® skirted 96- and 384-well PCR plates HSP-series	5–125 μl (96-well) 5–30 μl (384-well)*	<ul style="list-style-type: none"> • Unique 2-component design resists warping and shrinkage • Rigid skirtdeck for lab automation; thin-wall polypropylene wells for optimal thermal cycling • 96-well format is compatible with DNA Engine Opticon real-time PCR detection systems
Thin-wall strip tubes TBS-series, TBC-series, and TLS-series	5–125 μl	<ul style="list-style-type: none"> • Tight sealing and convenient handling for multiple samples • Available with or without strip caps • Available in high and low profiles
Multiplate™ unskirted PCR plates; low-profile and full-height MLL-series MLP-series	5–125 μl	<ul style="list-style-type: none"> • Versatile, inexpensive high-performance plates can easily be cut to desired size when running fewer than 96 samples • Low-profile plates are more rigid; reduce potential for condensate formation • Available in 96- and 48-well formats

* Reliable cycling of substantially smaller volumes has been demonstrated with 384-well Hard-Shell plates using high-pressure motorized lids; please inquire for more information.

Practice of the patented polymerase chain reaction (PCR) process requires a license. Bio-Rad and MJ brand thermal cyclers and systems include an Authorized Thermal Cycler and may be used with PCR licenses available from Applied Biosystems. Their use with Authorized Reagents also provides a limited PCR license in accordance with the label rights accompanying such reagents. Some applications may also require licenses from other third parties.

ABI is a trademark of Applied Biosystems.

