

# Auto-Sealing Lids

## Reusable Automation-Friendly Sealers for PCR Plates

These lids are reusable automation-friendly sealers that prevent evaporation and contamination during reaction assembly and seal tightly for thermal cycling when the cycler lid is closed. Lids are constructed of metal with an attached compressible pad (Microseal® 'P+' material).

When auto-sealing lids are used in combination with a Moto-Alpha™ motorized cycler lid, automated sealing and unsealing of PCR plates can be accomplished without an expensive heat-sealing or piercing device. The rigid metal lids may be handled with robotic arms for full automation of lidding and delidding. The extremely tight seal produced by the compressible pad in combination with the high-pressure motorized lid allows confident cycling of very low-volume reactions (down to 1 µl) in 384-well PCR plates.

Both flat and arched lids are available. The arched lid automatically releases from the PCR plate after thermal cycling, and it can then be removed by a robotic arm. Arched lids are therefore ideal for SNP reactions that must be opened and resealed repeatedly. The flat lid is the best choice for low-volume reactions (1–5 µl) and for storage of samples after PCR. The flat lid must be removed manually.

### Auto-Sealing Lid Selection Chart

Lid Format	Plate Dimensions	Motorized Lid Minimum Reaction Volume	Motorized Lid Pressure Setting	Manual Lid Minimum Reaction Volume	Feature
Flat lid	96-well	≥3 µl	1x	≥5 µl	Remains sealed for postcycling storage
	384-well	≥1 µl	1x	≥2 µl	
Arched lid	96-well	≥5 µl	2x	≥6 µl	Lid auto-releases for repeated access
	384-well	≥1 µl	2x	Not recommended	

### Auto-Sealing Lids, Flat

MSL-2012 Contains four metal lids with attached sealing pads. Reusable up to 50 times.  
For sealing PCR plates before, during, and after cycling.

### Auto-Sealing Lids, Arched

MSL-2022 Contains four metal lids with sealing pads. Reusable up to 50 times. Self-releasing lids, for sealing PCR plates before and during cycling.

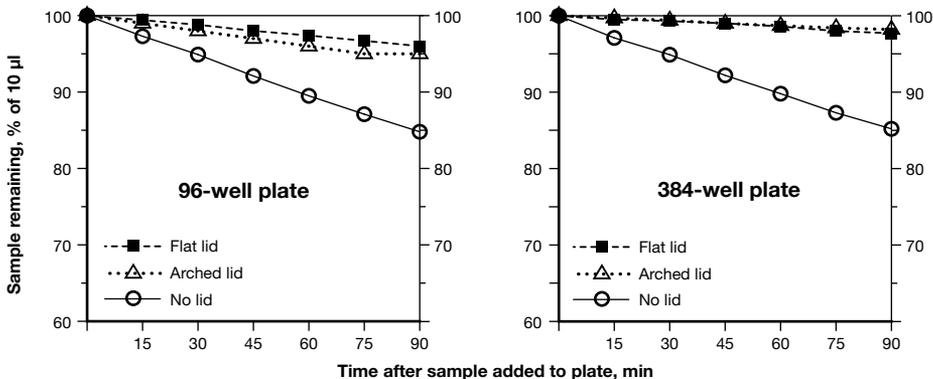
MSL-2032 Wide tab. Lids have wide tabs along two edges to provide a larger surface for robotic grippers. Contains four metal lids with sealing pads. Reusable up to 50 times. Self-releasing lids, for sealing PCR plates before and during cycling.



## Tips for Use

- Clean the surface of the pad before each use (e.g., wipe with a 10% bleach solution, followed by an ethanol or ddH<sub>2</sub>O rinse)
- To ensure contamination-free reaction setup, place a lid on each PCR plate to be used. Remove lid just before adding reaction mixtures, and replace it immediately after to reduce evaporative loss and the possibility of contamination. If the lid is removed before the experiment is completed, it is best to maintain the same orientation when replacing the lid, to avoid cross-contamination of wells
- The lid serves as an effective seal during PCR. After thermal cycling, the arched lid will automatically release from the PCR plate. The flat lid will remain tightly sealed to the PCR plate for up to 24 hours, and can be used for short-term storage down to -20°C. To remove the flat lid, lift up at one corner and peel the lid off the plate. Before opening, check to see if any samples are suspended above the well bottoms and, if so, briefly centrifuge the plate to prevent aerosol generation
- For best results, use a constant lid temperature of 90°C and set the lid pressure at 1x for flat lids, or 2x for arched lids
- If you notice any tendency for the pad to shift on the metal backing, turn the auto-sealing lid 180° from run to run. If necessary, the pad can be peeled from the lid and repositioned
- Discard the auto-sealing lid after 50 uses

## Evaporation Prevention During Reaction Setup (Before Thermal Cycling)



Both flat and arched auto-sealing lids are effective at preventing reagent evaporation from PCR plates during room-temperature reaction setup. Over 90 min, less than 3% (<0.3 µl) was lost to evaporation from the 384-well plates, and less than 5% (0.5 µl) was lost from the 96-well plates. Hard-Shell® PCR plates were used. Sample volume was 10 µl.

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