

Pneumatic Plate Clamp for Oligo Deprotection



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Operators Guide, Plate Clamp for Oligo Deprotection

This document will instruct you on the proper use of the Plate Clamp designed for deprotecting oligos that have been Cleaved in a 96 well plate or were transferred to a 96 well plate after synthesis.

Theory of operation:

This device is designed to allow for easy deprotection (removal of side chain protecting groups) of synthesized oligos. Cleaved oligos should have been deposited in a deep well plate or in a rack of tubes depending on what the user prefers.

A seal is applied to the top of the Plate or Rack of tubes to seal the tops so the Cleavage Reagent can not escape when the device is heated.

The Plate or Rack of tubes with the top seal is placed in the Pneumatic Plate Clamp. Air or Gas pressure is applied to the Clamp to force the top seal in place.

The assembly is placed in a heating device such as an Oven or a Water Bath. It is recommended that the Heat source is not set to a temperature above 75 degrees C.

Allow the Clamped Plate / Rack assembly to stay in the Oven or Water bath as long as necessary to completely deprotect the oligo side chains. Typically this would be about 3 to 4 hours at 75 Degrees C. If you use dG IBU, deprotection needs to be longer.

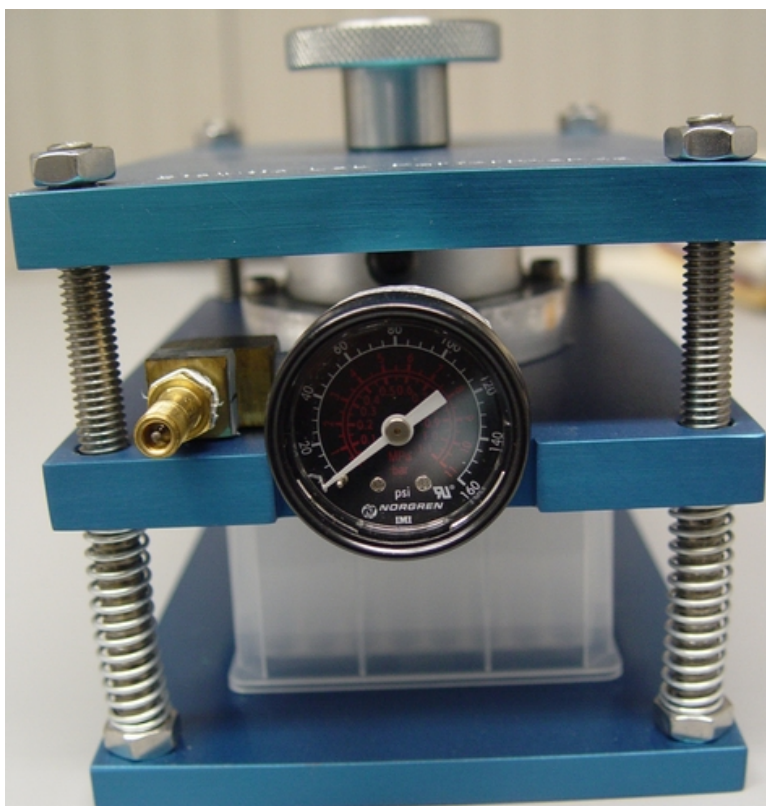


Figure 1, shows the Pneumatic Plate Clamp with a Deep Well plate in place and with the pressure at Zero psi.

Deprotection Procedure Using the Pneumatic Plate Clamp:

When cleavage is complete, the oligo will be in the Deep Well Plate / Cluster Tubes suspended in about 800 to 1000 ul of cleavage reagent.

The next step is to deprotect the cleaved oligos.

1. Place a seal on top of the Deep Well Plate / Cluster Tubes. This seal can be a flat piece of Silicon that is about 1/8 in thick.
2. Place the Deep Well Plate / Cluster Tubes into the Pneumatic Plate Clamp as shown in Figure 2.
3. Place the clamped plate into an oven pre-heated to 75 degrees C.
4. After 2 to 2.5 hours, remove the clamped plate from the oven.
5. Place the hot, clamped plate in the freezer to cool it.
6. Make certain that the plate is cold before releasing the Air / Gas pressure to unclamping it.
7. Dry the Cleavage Reagent using a hot air dryer or a speed vac.
8. Re-suspend the oligos in DI Water and read the OD as desired.

Note: To use this device requires the following items which are not included with the Pneumatic Plate Clamp:

- A source of pressurized Air or Inert Gas, 100 PSI.
- An Oven or a Water Bath capable of being controlled at 75 Degrees C
- A Freezer for cooling the Clamp after the Deprotection Reaction is complete.

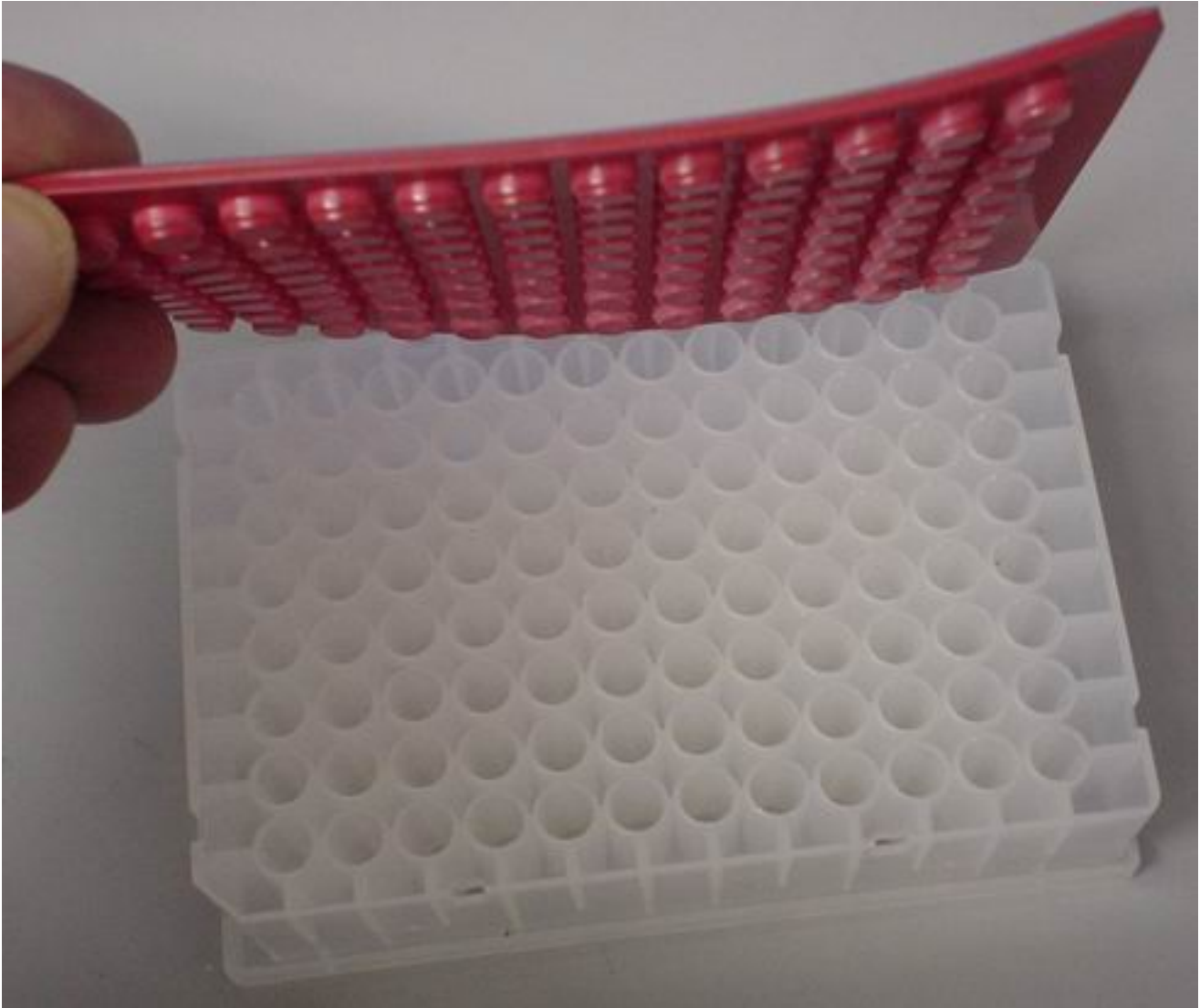


Figure 2

Figure 2 Shows the Pneumatic Plate Clamp with a Deep Well Plate in place in it while pressure is being applied.



Polypropylene Deep Well Plate with round holes and shown with a cover that has protrusions that will seal the wells.





Polypropylene Deep Well Plate with square holes





Polypropylene Deep Well Plate with square holes and shown with a cover that has protrusions that will seal the wells.

