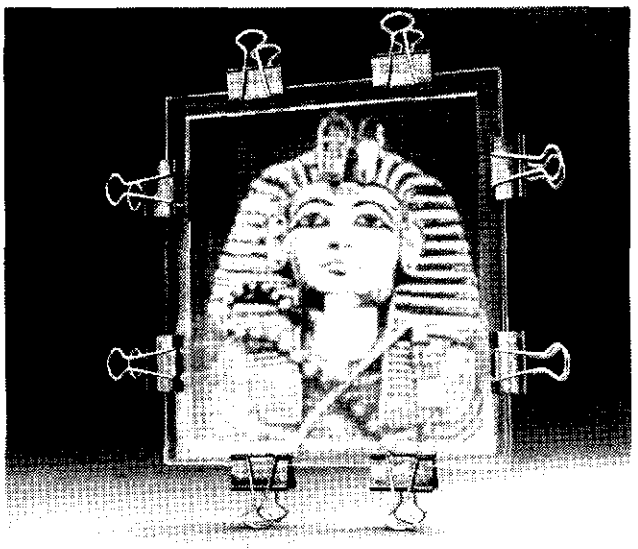
TUT'S TOMB Gel Dryer Instructions

Revised August 1992



INTRODUCTION: Since 1979, Idea Scientific has manufactured thousands of gel drying frames for the drying of MINI-SLAB gels. These heatless and vacuumless gel dryers have been very useful for the preservation of countless gels. The thinning of larger format gels now allows the application of this simple technology to the drying of gels of all sizes. Idea Scientific now manufactures dryers in many sizes and a special cellophane for use in these dryers. In general, the thinner and more dehydrated the gel is when it is put in the frame, the more likely the gel will dry without cracking. The following methods have been used in our research laboratories for more than ten years, and serve as a guide.

A. DUAL SHEET METHOD. This is the most commonly used method for long-term storage

1. Stain and de-stain the gel as normal, adding *10% glycerol to the de-stain.*
2. Cut a piece of cellophane to the size of the solid backing plate, wet the cellophane with water (do not soak) and smooth over the backing plate. (Hint: Cut from the roll the length of cellophane needed, then allow the curly nature of the cellophane to re-roll the cellophane. Cut to the proper width with a single scissors snip.)
3. Center the gel on the backing plate.
4. Smooth a second sheet of wet cellophane over the gel, clamp the frame over this sheet with several binder clips, and dry horizontally overnight.
5. Remove the dried gel from the frame, cut off excess cellophane and store gel flat. Gels can be stored indefinitely if not exposed to humidity fluctuations.

B. SINGLE SHEET METHOD. Most commonly used for radiography and fluorography of gels.

1. Stain and de-stain the gel as normal, adding 3% (not 10%!) glycerol to the de-stain.
2. If for fluorography, soak the gel in the flourography solution for a couple of minutes.
3. Center the gel directly on the solid backing plate and overlayer with a piece of wet cellophane cut to the size of the backing plate. Clamp the frame in place with several binder clips.
4. Allow the gel to dry completely. Carefully *remove the gel from the frame, noting which side is* without cellophane. Lay photographic film on the non-cellophane side for exposure. Gel must be sealed in a humidity sealed environment for long-term storage.

C. TWO FRAME METHOD. This method is the same as the two-sheet method, except the backing plate is replaced by a second frame of the same size. These gels dry twice as fast.

D. SPECIAL METHOD TO ELIMINATE CRACKING OF SILVER STAINED GELS AND HIGH PERCENTAGE ACRYLAMIDE GELS.. Soak gelsl in 20% ethanol, 10% glycerol for 30 minutes before drying. Some scientists use a 10% EtOH, 5% glycerol soak.

This works well!

E. ALTERNATE METHOD FOR SILVER STAINED GELS. spread two drops of 10% SDS on *each side of the gel.*

F. HINTS:

1. Removal of the well-formers at the top of the gel will give more uniform drying.
2. Many scientists wet the cellophane with the de-stain *rather than water.*
3. Partially dry gels will curl. Flatten them overnight with a couple of heavy books.
4. It is best to cut the cellophane with dry hands.

REFERENCES: The earliest reference to usage of a gel drying frame is in "SDS Microslab Linear Gradient Polyacrylamide Gel Electrophoresis," Matsudaira, P.T., and Burgess, D.R., Analytical Biochemistry, Vol. 87, pp. 386-396, (1978). Please use this reference in future publications.