Technical Bulletin

Gel Drying Kit

INSTRUCTIONS FOR USE OF PRODUCTS V7120 AND V7131.

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I. Description

The Gel Drying Kit provides a convenient and economical alternative to expensive and sometimes problematic gel dryers and vacuum systems. Both polyacrylamide and agarose gels may be dried using this kit. Gels are placed between two moistened sheets of Gel Drying Film, clamped between the Gel Drying Frames provided and allowed to dry overnight. Gels dried in this manner can easily be viewed while drying and, once dry, are protected from damage and can be stored in laboratory notebooks. The Gel Drying Film is essentially gas-impermeable when dry.

A set of Gel Drying Frames will accommodate one standard 16 × 16cm polyacrylamide gel, four 7 × 9cm minigels or one 7 × 10cm agarose gel.

II. Product Components and Storage Conditions

Product	Cat.#
Gel Drying Kit, 17.5 × 20cm capacity	V7120

Includes:

- 1 pair Gel Drying Frames, 17.5 × 20cm capacity
- 20 sheets Gel Drying Film, 25.0 × 28cm (10 uses)
- 12 Clamps
- 1 Protocol

II. Product Components and Storage Conditions (continued)

Product	Size	Cat.#
Gel Drying Film, 25.0 × 28cm (50 uses)	100 sheets	V7131

Storage Conditions: Store gel drying film at room temperature (15–30°C), and protect from moisture.

III. Drying of SDS Polyacrylamide or Agarose Gels

III.A. SDS Polyacrylamide Gels

If the gel is to be dried immediately after electrophoresis, proceed directly to Step 2. See Figure 1 for a diagram of the gel drying apparatus.

1. Following staining and destaining techniques, soak the gel in 40% methanol, 10% glycerol, 7.5% acetic acid for 3–5 minutes.
2. Thoroughly moisten one sheet of Gel Drying Film in 40% methanol, 10% glycerol, 7.5% acetic acid. **Do not** soak the film in this solution for more than 1 minute.
3. Place one of the plastic Gel Drying Frames on a clean, smooth surface. Center and place the Gel Drying Film over the frame. Remove any wrinkles so that the Gel Drying Film lies flat with respect to the surface.
4. Place the gel(s) to be dried on the wet film and position as desired. Remove any air bubbles that may be trapped between the gel and the film.

   Tip: Place a few milliliters of gel drying solution directly onto the gel before Step 5. This will help to eliminate air bubbles from the gel surface.
5. Thoroughly moisten the second sheet of Gel Drying Film in 40% methanol, 10% glycerol, 7.5% acetic acid. Again, **do not** soak the film in this solution for more than one minute. Slowly place the Gel Drying Film over the gel(s) so that no air bubbles are trapped between the two sheets. Air bubbles can be removed by slowly pulling the Gel Drying Film back, rewetting the lower sheet and laying the Gel Drying Film down again.

(!) It is important to remove all air bubbles from between the two sheets of Gel Drying Film. Air bubbles may cause the gel to crack during drying.

6. Place the second Gel Drying Frame directly over the first.
7. Carefully slide the frame assembly to the edge of the surface. Beginning at one side of the frame assembly, grasp the exposed edge of the Gel Drying Film and gently pull it over the frame.
8. Clamp the folded edge of Gel Drying Film to the frame using the clamps provided. Continue this process around the frame, using 2–3 clamps per side.

9. Place the frame assembly in a vertical position and allow it to dry completely.

   Tips: Place the assembled gel frame in front of a running fan to significantly reduce the drying time. When completely dry, remove the gel from the frame and place it under a heavy weight, such as a book, overnight. This will reduce curling when the gel is attached to paper for permanent storage.

III.B. Agarose Gels

1. Begin with Step 2 (Section III.A) and continue as for polyacrylamide gels.

   Note: If the agarose gel is thick (2–4mm), the first frame should be elevated somewhat to allow the Gel Drying Film to form a small depression. This allows the water to pool in the area where the gel is to be placed, avoiding the trapping of air bubbles. Thicker agarose gels may require longer drying times.

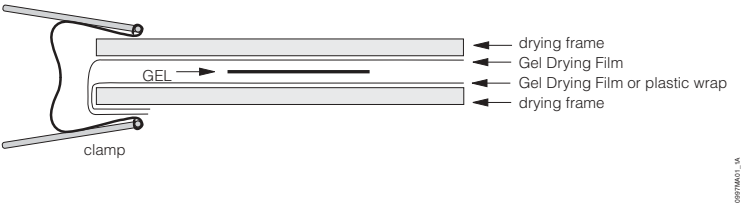

Figure 1. Setup for using the gel drying frames.

IV. Protocol for Radioactive Gels

Gels that contain radiolabeled proteins can be dried using the Gel Drying Kit. For most applications, gels labeled with ^{32}P can be dried as described in Section III. If the gel contains proteins labeled with relatively weak β particles (^{14}C, ^{35}S and ^{3}H), the following protocol is recommended (1–3).

1. Following staining and destaining techniques, soak the gel in 40% methanol, 10% glycerol, 7.5% acetic acid for 3–5 minutes.
2. Place one of the plastic Gel Drying Frames on a clean smooth surface.
3. Center and place a piece of plastic wrap (e.g., Saran™ brand plastic film) over the frame. The plastic wrap should be approximately the same size as the Gel Drying Film provided. Remove any wrinkles so that the plastic wrap lies flat with respect to the surface.

   ! It is important to remove all air bubbles from between the Gel Drying Film and the plastic wrap. Air bubbles may cause the gel to crack during drying.

4. Wet the plastic wrap with water in the area where the gel(s) is to be placed.

IV. Protocol for Radioactive Gels (continued)

5. Place the gel(s) to be dried on the wet plastic wrap and position as desired. Remove any air bubbles that may be trapped between the gel(s) and plastic wrap.

   Tip: Place a few milliliters of gel drying solution directly onto the gel before Step 6. This will help to eliminate air bubbles from the gel surface.

6. Thoroughly moisten one sheet of Gel Drying Film in 40% methanol, 10% glycerol, 7.5% acetic acid. **Do not** soak the film in this solution for more than 1 minute. Slowly center and place this sheet over the gel(s) so that no air bubbles are trapped. Air bubbles can be removed by slowly pulling the Gel Drying Film back, rewetting the gel(s) and plastic wrap and laying the Gel Drying Film down again.

7. Place the second Gel Drying Frame directly over the first frame.

8. Carefully slide the frame assembly to the edge of the surface. Beginning at one edge, grasp the exposed edge of the Gel Drying Film/plastic wrap and gently pull it over the frame.

9. Clamp the folded edge of Gel Drying Film/plastic wrap to the frame using the clamps provided. Continue this process around the frame, using 2–3 clamps per side.

10. Place the frame assembly in a horizontal position and allow it to dry completely.

11. After drying, remove the plastic wrap and place the gel in direct contact with the autoradiography film.

V. References

1. Goldenberg, D.P. (1988) Analysis of protein conformation by gel electrophoresis. In: *Protein Structure: A Practical Approach*, T.E. Creighton, ed., IRL Press, Oxford, 225.
2. Matsudaira, P.T. and Burgess, D.R. (1978) SDS microslab linear gradient polyacrylamide gel electrophoresis. *Anal. Biochem.* **87**, 386–96.
3. Promega Corporation (1990) Gel drying frames update. *Promega Notes* **28**.

VI. Related Products

Product	Size	Cat.#
Broad Range Protein Molecular Weight Markers	100 lanes	V8491
Factor Xa Protease	50µg	V5581