

One-step PAGE Colored Gel Rapid Preparation Reagent Kit

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1.Product Description

This product is suitable for the Tris-Glycine electrophoresis system and contains premixed solutions for preparing the concentrated gel (upper gel) and the separated gel (lower gel). During the gel preparation process, there is no need to calculate the amount of each component, no need for dilution, and no need to add TEMED. Just mix the upper gel solution with the upper gel buffer and the lower gel solution with the lower gel buffer in a 1:1 ratio respectively and add the coagulant to gel, simplifying the operation steps for preparing SDS-PAGE gel. Multiple gels can be quickly poured, making the gel-making process more convenient. The upper layer of tape is colored, making the sample loading holes clearly visible and facilitating sample loading. The dry powder form of the coagulant provided with this product should be stored at 2-8°C, and after dissolution, it should be kept at -20°C.

Product Features:

- 1) One-Step Gel Casting – Simply pour the lower and upper gels sequentially to complete gel preparation;
- 2) Simple and Rapid Operation – No need to calculate component amounts or prepare additional reagents, and the gel polymerizes quickly;
- 3) Colored Upper Gel – The colored upper gel facilitates sample loading;
- 4) Eliminates Unpleasant Odor – No TEMED addition required, preventing foul odor dispersion.

2. Product Composition

Component name	volume	Storage temperature
Lower gel solution (gel solutionA)	250ml	2-8°C
Lower gel buffer (buffer solutionA)	250ml	2-8°C
Upper gel solution (gel solutionB)	100ml	2-8°C
Upper gel buffer (buffer solutionB)	100ml	2-8°C
coagulant	8ml×2	Dry powder 2–8°C, dissolved then -20°C

Note:

- ① Add 8 ml of ddH₂O into the bottle containing the lyophilized coagulant powder, and shake to dissolve. It is recommended to aliquot and store the dissolved coagulant at -20°C. Before each use, ensure it is completely thawed.
- ② To ensure long-term use of the kit, an additional bottle of lyophilized coagulant powder is provided. The usage instructions for both bottles are identical.
- ③ It is recommended to dissolve the second bottle only after the first one has been exhausted.

3.Operation Procedure

Clean the glass plate used for gel preparation (ensure it matches the correct type, for example, if 1.0 mm gel is being poured, then use the corresponding 1.0 mm glass plate) thoroughly, assemble it properly, and prepare a mini gel as an example (it is recommended to first prepare the lower gel layer, wait for it to solidify completely, then prepare the upper gel mixture, and finally pour the upper gel layer):

3.1 Preparation of the lower gel: According to the "Suggested Formula for Lower Gel (Single Gel)" table, take the required amounts of each

component of the lower gel based on the thickness of the gel to be prepared.

- ① Take equal volumes of **gel solution A** and **buffer solution A**, and add them to a container. Gently shake to mix well.
- ② Add the coagulant to the mixed solution and gently shake to mix well, avoiding vigorous shaking that may cause excessive bubbles.
- ③ Pour the well-mixed solution into the assembled gel glass plate. Depending on the length of the comb teeth used, the liquid surface should be 0.5 cm below the top of the inserted comb teeth (to avoid waste, the solution prepared in this step is in excess; do not pour all of it in).
- ④ It is recommended to seal the lower gel with ddH₂O (sealing can obtain a more even boundary between the upper and lower gels and achieve better gel running results). Immediately after pouring the lower gel into the glass plate, slowly add ddH₂O onto the surface of the lower gel until it is level with the upper edge of the short side of the glass plate.
- ⑤ Wait for the lower gel to solidify (about 10 minutes), then remove the ddH₂O on top and proceed with the preparation of the upper gel.

3.2 Preparation of the upper gel: According to the "Upper Gel Preparation Suggestion (Single Gel)" table, based on the thickness of the gel to be prepared, take the required amounts of each component of the upper gel.

- ① Take equal volumes of **gel solution B** and **buffer solution B**, and add them to a container. Gently shake to mix well.
- ② Add the coagulant to the mixed solution, gently shake to mix well, and avoid vigorous shaking to prevent excessive bubbles.
- ③ Slowly pour the well-mixed solution into the gel-making glass plate until it is level with the upper edge of the short side of the glass plate, and insert the corresponding comb (make sure to check if the comb used is correct, for example, if 1.0 mm gel is being poured, a 1.0 mm comb must be used).
- ④ After the upper gel solidifies (about 10 minutes), gently pull out the comb and proceed with electrophoresis.

Lower gel preparation recommendation (per gel sheet)

Gel thickness	Lower gel solution (gel solutionA)	Lower gel buffer (buffer solutionA)	coagulant (APS)
0.75mm	2.0ml	2.0ml	40μl
1.00mm	2.7ml	2.7ml	60μl
1.50mm	4.0ml	4.0ml	80μl

Upper gel preparation recommendation (per gel sheet)

Gel thickness	Upper gel solution (gel solutionB)	Upper gel buffer (buffer solutionB)	coagulant(APS)
0.75mm	0.50ml	0.50ml	10μl
1.00mm	0.75ml	0.75ml	15μl
1.50mm	1.00ml	1.00ml	20μl

Note:

- ① After pouring the lower layer gel, if leaving it unsealed is selected, there is no need to wait for the lower layer gel to solidify before pouring the upper layer gel. **(However, since the lower layer gel is not yet solidified at this point, ensure that the operation is performed gently during the pouring of the upper layer gel to avoid flushing the upper layer gel mixture into the lower layer gel mixture, which may result in uneven gel formation.)** After pouring, insert the corresponding comb and let it stand at room temperature until both the upper and lower layer gels solidify (approximately 10 min). Then, gently remove the comb for electrophoresis.
- ② Temperature shows a significant positive correlation with the solidification rate. Under the same conditions, as the temperature increases, the solidification rate accelerates. In practice, the amount of accelerator can be adjusted appropriately according to the ambient temperature to achieve the desired solidification effect. For recommended accelerator usage under different temperature conditions, please refer to the table below:

Recommended usage of Lower gel coagulant (per gel sheet) at different temperatures

Gel thickness	T < 10℃	10℃≤T < 20℃	20℃≤T < 25℃	T≥25℃
0.75mm	60μl	48μl	40μl	24μl
1.00mm	90μl	72μl	60μl	36μl
1.50mm	120μl	96μl	80μl	48μl

Recommended usage of Upper gel coagulant (per gel sheet) at different temperatures

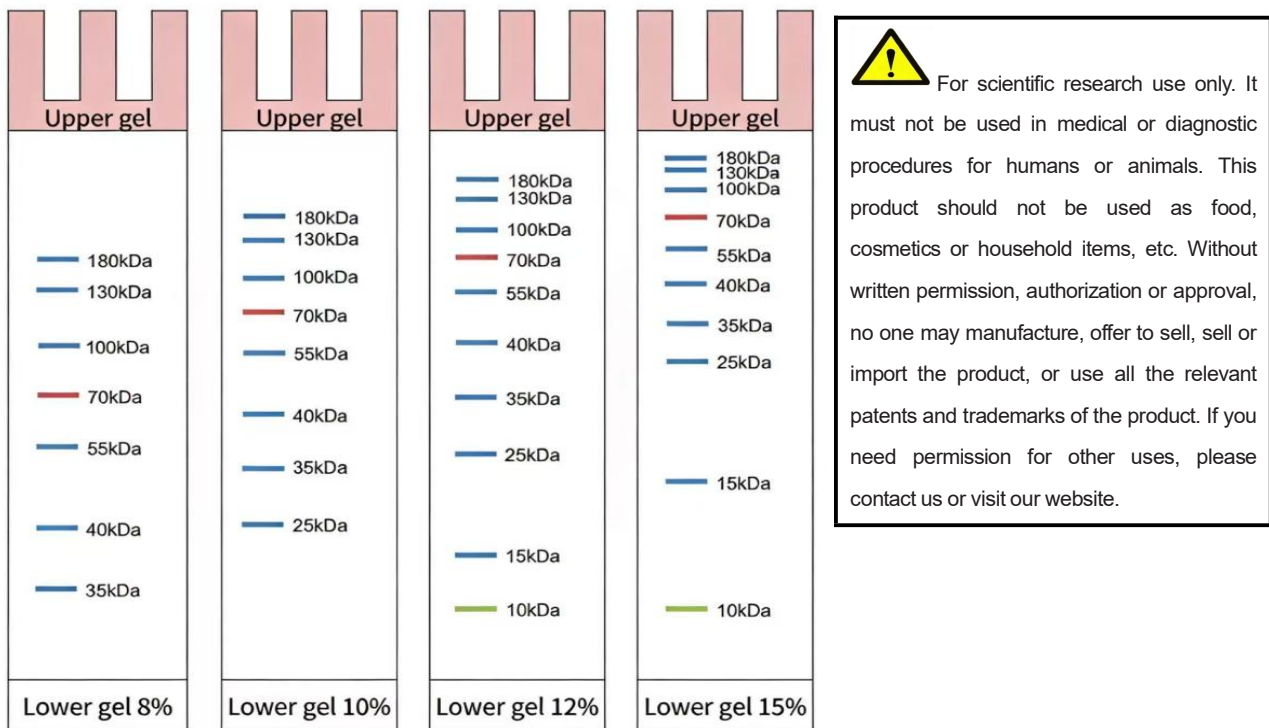
Gel thickness	T < 10℃	10℃≤T < 20℃	20℃≤T < 25℃	T≥25℃
0.75mm	15μl	12μl	10μl	6μl

1.00mm	22.5µl	18µl	15µl	9µl
1.50mm	30µl	24µl	20µl	12µl

4. Precautions

- 4.1 Do not shake or vortex the mixed solution vigorously to prevent excessive oxygen from mixing into the gel solution, which may inhibit gel solidification.
- 4.2 Equipment used for gel preparation should be kept clean to avoid contamination and ensure optimal performance.
- 4.3 The amount of catalyzer provided in this manual is for reference only. The actual quantity may be adjusted based on personal experience and specific conditions. Adding more catalyzer will accelerate gelation, while less will slow it down.
- 4.4 When preparing gels, avoid adding catalyzer to both the upper and lower gel solutions simultaneously. Otherwise, if the lower gel solution takes too long to pour, the upper gel solution may not be poured in time, affecting the quality of the final gel.
- 4.5 During gel preparation, first mix the gel solution and buffer thoroughly before adding the catalyzer.
- 4.6 After mixing the upper/lower gel solution with the catalyzer, pour it into the glass plates within 2 minutes, and complete sealing or comb insertion promptly.
- 4.7 Before gel preparation, allow the gel solution and buffer to equilibrate to room temperature (by letting them stand for about ten minutes) to effectively avoid bubble formation during gelation.
- 4.8 Recommended electrophoresis conditions are: 140 V, approximately 60 minutes.

5. Gel Separation Range



The figure above shows the separation schematic of protein molecular weight standards (Thermo: 26616, 10 to 180 kDa, containing 10 protein bands) on SDS-PAGE gels of different concentrations. Due to variations in temperature, pH, and other factors, the actual separation may slightly differ; this figure is for reference only.

6. Related Products

Product	Cat.No.	Size	Quantity
8% one-step PAGE colored gel rapid preparation Reagent Kit	BK0061-01	250ml	
10% one-step PAGE colored gel rapid preparation Reagent Kit	BK0062-01	250ml	0.75mm adhesive can produce at most 125 pieces, 1.00mm adhesive can produce at most 90 pieces, 1.50mm adhesive can produce at most 60 pieces
12% one-step PAGE colored gel rapid preparation Reagent Kit	BK0063-01	250ml	
15% one-step PAGE colored gel rapid preparation Reagent Kit	BK0064-01	250ml	