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Product Information

SDS Gel Preparation Kit

Catalog Number **08091**

Product Description

The SDS Gel Preparation Kit includes ready-to-use solutions for the convenient preparation of approximately 50 (80 mm × 80 mm, 15 mL) gels for SDS electrophoresis (Laemmli type). In comparison to precast gels, the SDS Gel Preparation Kit offers increased shelf stability and reduced cost per gel. Additionally, utilizing premade solutions is a safer option for researchers as these solutions circumvent the risk of inhaling neurotoxic acrylamide during solution preparation.

Components

30% Acrylamide:0.8% Bisacrylamide (PAA) stock solution (Catalog Number 06867) — 250 mL

Note: The acrylamide/bisacrylamide stock solution contains a stabilizing granulate to prohibit the formation of neurotoxic acrylic acid during storage. To avoid mixing the stabilizer into the gel, allow the solution to settle for approximately 15 seconds before decanting the stock solution.

Separation gel, 3× concentrate (Catalog Number 14946) — 250 mL

Stacking gel, 5× concentrate (Catalog Number 19505) — 100 mL

Running buffer, 10× concentrate (Catalog Number 14393) — 3 × 250 mL

Tetramethylethylenediamine (TEMED) 10% solution, (Catalog Number 07654) — 30 mL

Incubation buffer concentrate — 30 mL

Ammonium persulfate (APS) — 10 g

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Acrylamide is a neurotoxin. Wear gloves when handling or casting polyacrylamide gels.

Storage/Stability

Store polyacrylamide solutions at 2–8 °C. Cast gels can be stored in a wetted, plastic bag at 4–8 °C for up to two weeks prior to use.

Procedure

Solution preparation

1. Mix samples (stored in aliquots at 20 °C) or marker proteins in a 1: 1 ratio with incubation buffer concentrate and incubate the resulting solution for 2 minutes at 100 °C. Centrifuge samples to remove undissolved particles.
2. Prepare 10% (w/v) ammonium persulfate (APS) solution by adding 1.0 g of APS to 10.0 mL of ultrapure water. The APS solution can be stored at 2–8 °C for up to one week. After a week, a new APS solution should be prepared prior to use.

Polyacrylamide gel preparation

3. Separation gel (15 mL): Use the pipetting scheme (Table 1) to determine quantities needed for the correct gel percentage. Combine all reagents and mix well. Add 0.10 mL ammonium persulfate solution, mix well, and use immediately. Cast in cassettes and prepare stacking gel.

Table 1.
Pipetting scheme for separation gel

	5%	7.5%	10%	12.5%	15%
PAA stock solution	2.50	3.75	5.00	6.25	7.50
Separation gel concentrate	5.00	5.00	5.00	5.00	5.00
Ultrapure water	7.25	6.00	4.75	3.50	2.25
TEMED solution	0.25	0.25	0.25	0.25	0.25

4. Stacking Gel (5 mL): Use the pipetting scheme (Table 2) to determine quantities needed for the correct gel percentage. Combine all reagents and mix well. Add 0.03 mL of ammonium persulfate solution, mix well, and use immediately by carefully casting over the separation gel. Insert appropriate well combs into gel cassette and allow the gel to polymerize for at least 1 hour prior to use.

Table 2.
Pipetting scheme for stacking gel

	3%	8%
PAA stock solution	0.50	1.00
Stacking gel concentrate	1.00	1.00
Ultrapure water	3.40	2.90
TEMED solution	0.10	0.10

5. Prepare the running buffer by diluting the running buffer concentrate in a ratio of 1:9 with ultrapure water. Mix well. Add the running buffer solution to the electrophoresis chamber and install the glass plate/gel sandwich without introducing air bubbles.
6. Apply electric current to the electrophoretic chamber using a certified power supply (CE or ISO certified). Example: For an 80 mm × 80 mm, 10% PAA gel, set voltage to 200–250 volts (V) and current to 20–25 mA. Stop the run after the blue front dye (bromophenol blue) has reached bottom of the gel (1–1.5 hours).
7. Remove the gel from the electrophoretic chamber and disassemble the glass plate/gel sandwich. Fix and stain the gel for protein visualization, as instructed by your protocol.

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