invitrogen™

UltraPure™ Agarose 1000

Cat. No.: 16550-100

Size: 100 g
Store at 15 to 30°C

Description

Agarose 1000 is a specialized agarose that exhibits the following properties:

- high resolution of PCR products and other short DNA fragments
- better handling because of a stronger gel structure
- improved clarity of the gel, enhancing visibility
- excellent mechanical strength

Specifications	**4% Conc.**
Gel Strength	≥ 1,400 g/cm^2
Gel Point	≤ 32.5–38°C
Melting Point	≥ 90°C

Usage

Refer to the following table for the recommended concentration of Agarose 1000 to resolve DNA fragments of the approximate listed range:

Fragment Size	% Agarose (in 1X TAE)	% Agarose (in 1X TBE)
500–1,000	3	2
100–500	4	3
10–100	6	5

Note: TBE is prefered for small (<1 kb) DNA as it shows increased resolution of small DNA.

Part No. 251053W

Rev. Date: 11 Nov 2008

Dissolving Agarose 1000:

Note: Remember to take the thickness of the gel into account when determining the amount of agarose solution needed to cast your gel, as it affects both well volume and power requirements.

Method 1: Microwave (recommended for concentrations ≤3%)

1. Determine the amount of agarose solution needed to cast your gel.
2. Add chilled buffer (TAE or TBE) into a flask that can hold 2–4 times the volume of your agarose solution. Place a magnetic stir bar into the flask.
3. Put the flask on a magnetic stirrer and slowly sprinkle the required amount of agarose powder into the flask as the solution mixes, to prevent the formation of agarose clumps.
4. Remove the stir bar.
5. Weigh the flask and solution before heating.
6. Cover the mouth of the flask with plastic wrap, and pierce the wrap with a small hole for ventilation.
7. Place the flask in the microwave oven and heat for two minutes.
8. Remove the flask carefully, and swirl gently to resuspend any agarose particles. **Exercise caution – microwaved solution may become superheated and foam over when agitated**.
9. Reheat the solution at 15–20 second intervals or until the solution comes to a boil, and all the agarose particles are dissolved.
10. Remove the flask carefully and swirl gently to mix the solution.
11. Place the flask on a scale, and bring it back to its initial weight (from Step 5) with warm distilled water.
12. Mix gently and cool to 50–60°C (at room temperature for at least 20 minutes) before pouring the solution into the casting tray.

Method 2: Boiling water bath (for all concentrations, especially 4%–5%)

1. Determine the amount of agarose solution needed to cast your gel.
2. Add chilled buffer into a flask that can hold 2–4 times the volume of your agarose solution. Place a magnetic stir bar into the flask.
3. Put the flask on a magnetic stirrer and slowly sprinkle the required amount of agarose powder into the flask as the solution mixes, to prevent the formation of agarose clumps.
4. Weigh the flask and solution before heating.
5. Cover the mouth of the flask with plastic wrap, and pierce the wrap with a small hole for ventilation.
6. Bring the solution to a boil while stirring, and allow it to boil gently for approximately 10 minutes or until the agarose is completely dissolved.
7. Place the flask on a scale, and bring it back to its initial weight (from Step 4) with warm distilled water.
8. Mix gently and cool to 50-60°C (at room temperature for at least 20 minutes) before pouring the solution into the casting tray.

Method 3: Autoclave (for all concentrations, especially ≥ 5%)

1. Determine the amount of agarose solution needed to cast your gel.
2. Add chilled buffer into a flask that can hold 2–4 times the volume of your agarose solution. Place a magnetic stir bar into the flask.
3. Put the flask on a magnetic stirrer and slowly sprinkle the required amount of agarose powder into the flask as the solution mixes, to prevent the formation of agarose clumps.
4. Remove the stir bar.
5. Place the flask in the microwave oven and heat for two minutes.
6. Cover the mouth of the flask with aluminum foil to prevent spillover and autoclave at 121°C for 15 minutes.
7. Remove the flask from the autoclave and allow it to cool to 50–60°C before pouring the solution into the tray.

Visualization of DNA

For visualization of DNA in the gel, a fluorescent dye can be added to the agarose solution just prior to pouring, or the gel can be stained after electrophoresis. For the intercalating dye ethidium bromide, use a final concentration of 0.5 µg/ml. If more sensitive detection is required, use SYBR® Green I nucleic acid gel stain (Invitrogen Cat. no. S-7563), or SYBR® Safe DNA gel stain (Invitrogen Cat. no. S33102). Refer to the appropriate instructions for these products for in-gel staining, or post-staining protocols.

Dye Mobility

Refer to the following table for the migration of Bromophenol Blue and Xylene Cyanol tracking dyes in relation to DNA:

% Agarose	Bromophenol Blue		Xylene Cyanol	
	TAE	TBE	TAE	TBE
2.5	130	70	950	700
3	80	40	650	500
4	40	20	350	250
5	30	8	200	140
6	20	4	120	90

Product Qualification

The Certificate of Analysis provides detailed quality control and product qualification information for each product. Certificates of Analysis are available on our website.

Go to www.invitrogen.com/support and search for the Certificate of Analysis by product lot number, which is printed on the box.

©2008 Invitrogen Corporation. All rights reserved.
For research use only. Not intended for any animal or human therapeutic or diagnostic use.