

UltraPure™ Low Melting Point Agarose

Cat. Nos.	Size	Store at 15 to 30°C
16520-050	50 g	
16520-100	100 g	

Description

UltraPure™ Low Melting Point (LMP) Agarose resolves DNA fragments >1,000 bp, and is ideal for recovery of DNA fragments, as it melts at ~65.5°C (below the T_m of most nucleic acids). A LMP Agarose solution remains fluid at 37°C, but sets rapidly at temperatures below 25°C, making it ideal for:

- Recovery of DNA fragments >1,000 bp
- Enzymatic in-gel manipulations
- Tissue and cell culture applications
- Viral plaque assays

Specifications

Gel Strength*	1.5% Conc.
Gel Point	≥ 200 g/cm ²
Melting Point	≤ 26–30°C
	≤ 65°C

* Gel strength is calculated at 1% concentration.

Usage

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

Fragment Size	% Agarose (in 1X TAE)	% Agarose (in 1X TBE)
500–25,000	0.75	0.70
300–20,000	1.00	0.85
200–12,000	1.25	1.00
150–6,000	1.50	1.25
100–3,000	1.75	1.50
50–200	2.00	1.75

Dissolving Low Melting Point Agarose:

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

1. Determine the amount of agarose solution needed to cast your gel.
2. Add room temperature 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 the solution until bubbles appear.
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 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

1. Determine the amount of agarose solution needed to cast your gel.
2. Add room temperature 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 hot plate 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 3) 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.

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). Use of SYBR® Safe DNA gel stain in conjunction with blue light transillumination is recommended for gel extraction procedures for cloning purposes. 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
0.5	1,020	70	11,700	6,100
0.75	500	40	4,000	2,850
1	350		2,300	1,700
1.25	200		1,500	1,000
1.5	150		1,000	700
1.75	100	20	700	550
2	60	8	550	400
2.5	30	4	320	250

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.

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