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ProductInformation

AGAROSE High Resolution

Product No. **A4718**
Store at Room Temperature

Product Description

Sigma's High Resolution Agarose is an intermediate-melting agarose with approximately twice the resolution capability of routine agarose. PCR products and DNA fragments ranging from 200-800 bp differing in size by only 2% can be resolved.

Physical Properties

Gelling temperature (3%)	≤35°C
Melting temperature (3%)	≤75°C
Gel strength (3%)	≥300 g/cm^2

Precautions and Disclaimer

Sigma's High Resolution Agarose is for laboratory use only. Not for drug, household or other uses. Please refer to the Material Safety Data Sheet (MSDS).

Suggested Agarose Concentrations

Size Range (bp)	Final Agarose Concentration	
	1X TAE Buffer	1X TBE Buffer
150-800	2.0%	1.8%
100-600	3.0%	2.0%
50-250	4.0%	3.0%
20-130	5.0%	4.0%
<80	-	5.0%

Dye Mobility Table

Migration of double-stranded DNA in relation to Bromophenol Blue (BPB) and Xylene Cyanol (XC) in High Resolution agarose gels.

1X TAE Buffer		%	1X TBE Buffer	
XC	BPB	Agarose	XC	BPB
480	70	2.0	310	40
200	40	3.0	140	35
120	35	4.0	85	30
85	30	5.0	60	15

Procedures

Microwave Instructions for Agarose Preparation

1. Choose a beaker that is 2-4 times the volume of the solution.
2. Add chilled electrophoresis buffer and a stir bar to the beaker.
3. Slowly sprinkle in the agarose powder while the solution is rapidly stirred.
4. Remove the stir bar.
5. Soak the agarose in the buffer for 15 minutes.
6. Weigh the beaker and solution before heating.
7. Cover the beaker with plastic wrap.
8. Pierce a small hole in the plastic wrap for ventilation. For agarose concentrations >4%, the following additional steps will further help prevent the agarose solution from foaming during melting/dissolution:
   a. Heat the beaker in the microwave oven on "Medium" power for 1 minute.
   b. Remove the solution from the microwave.
   c. Allow the solution to sit for 15 minutes.
9. Heat the beaker in the microwave on "Medium" power for 2 minutes.
10. Remove the beaker from the microwave oven. **Caution: Any microwaved solution may become superheated and foam over when agitated.**
11. Gently swirl the beaker to resuspend any settled powder and gel pieces.
12. Reheat the beaker on "High" power until the solution comes to a boil.

13. Hold at boiling point for 1 minute or until all of the particles are dissolved.

14. Remove the beaker from the microwave oven.

15. Gently swirl the beaker to thoroughly mix the agarose solution.

16. After dissolution, add sufficient hot distilled water to obtain the initial weight.

17. Mix thoroughly.

18. Cool the solution to 50-60°C prior to casting. Once the gel is cast, allow the molten agarose to cool and gel at room temperature. **The gel must then be placed at 4°C for 20 minutes to obtain optimal resolution and gel handling characteristics.**

Hot Plate Instructions for Agarose Preparation

1. Choose a beaker that is 2-4 times the volume of the solution.

2. Add chilled electrophoresis buffer and a stir bar to the beaker.

3. Slowly sprinkle the agarose powder while the solution is rapidly stirred.

4. Weigh the beaker and solution before heating.

5. Cover the beaker with plastic wrap.

6. Pierce a small hole in the plastic wrap for ventilation.

7. Bring the solution to a boil while stirring.

8. Maintain gentle boiling until all the agarose is dissolved (approximately 10 minutes).

9. Add sufficient hot water to obtain the initial weight.

10. Mix thoroughly.

11. Cool the solution to 50-60°C prior to casting. Once the gel is cast, allow the molten agarose to cool and gel at room temperature. **The gel must then be placed at 4°C for 20 minutes to obtain optimal resolution and gel handling characteristics.**

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