

MetaPhor® Agarose

The high resolution agarose that challenges polyacrylamide.

Introduction

MetaPhor® Agarose is a high resolution agarose that challenges polyacrylamide. MetaPhor® Agarose is an intermediate melting temperature (75°C) agarose with twice the resolution capabilities of the finest-sieving agarose products. Using submarine gel electrophoresis, you can resolve PCR⁺ products and small DNA fragments that differ in size by 2%.

Analytical Specifications

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

Applications

- High resolution separation of 20 bp-800 bp DNA fragments
- Recovery of fragments under 800 bp
- Fine analysis of PCR⁺ products
- AMPFLP, STR and tri- and tetranucleotide repeat analysis

Suggested Agarose Concentrations

Size Range (Base Pairs)	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 MetaPhor® Agarose gels.

1X TAE Buffer		%	1X TBE Buffer	
XC	BPB		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

Precautions

Always wear eye protection when dissolving agarose and guard yourself and others against scalding solutions. Refer to the Material Safety Data Sheet for additional safety and handling information.

Microwave Instructions for Agarose Preparation

1. Choose a beaker that is 2-4 times the volume of the solution.
2. Add **chilled** 1X or 0.5X 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 if not Teflon® coated.**
5. Soak the agarose in the buffer for 15 minutes before heating. This reduces the tendency of the agarose solution to foam during heating.
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 on the bench for 15 minutes.
9. Heat the beaker in the microwave oven 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°C-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** temperature 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 distilled water to obtain the initial weight.
10. Mix thoroughly.
11. Cool the solution to 50°C-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.**

Ordering Information

Catalog No.	Size
50181	25 g
50180	125 g
50184	500 g

For more information on MetaPhor[®] Agarose, contact Technical Service at (800) 521-0390 or visit our website at www.Lonza.com.

Related Products:

DNA Ladders
DNA Markers
AccuGENE[®] TAE and TBE Buffers
GelStar[®] Nucleic Acid Gel Stain

For Laboratory Use.

[†]The PCR process may be covered by one or more third-party patents.

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