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NuSieve® 3-1 Agarose

Easy-to-handle gels for PCR product separation and blotting.

Introduction

NuSieve® 3:1 Agarose is a standard melting temperature agarose for resolving DNA fragments ≤1,000 bp. The high gel strength results in easy-to-handle gels, enhancing the convenience of gel processing and blotting. Performance testing of NuSieve® 3:1 Agarose ensures fine resolution of DNA fragments up to 1,000 bp.

Analytical Specifications

Gelling temperature (4%)	32.5°C-38.0°C
Melting temperature (4%)	≤90°C
Gel strength (4%)	≥1,400 g/cm²

Applications

- PCR† product separation and blotting
- Analytical electrophoresis of DNA and RNA fragments ≤1,000 bp

Suggested Agarose Concentrations

Size Range (Base Pairs)	Final Agarose Concentration (%) 1X TAE Buffer	1X TBE Buffer
500-1,000	3.0	2.0
100-500	4.0	3.0
10-100	6.0	5.0

Dye Mobility Table

Migration of double-stranded DNA in relation to Bromophenol Blue (BPB) and Xylene Cyanol (XC) in NuSieve® 3:1 Agarose Gels.

1X TAE Buffer		%	1X TBE Buffer	
XC	BPB	Agarose	XC	BPB
950	130	2.5	700	70
650	80	3.0	500	40
350	40	4.0	250	20
200	30	5.0	140	8
120	20	6.0	90	4

Precautions

Always wear eye protection when dissolving agarose and guard yourself and others against scalding solutions. Refer to 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.

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 distilled water to obtain the initial weight.
10. Mix thoroughly.
11. Cool the solution to 50°C-60°C prior to casting.

Ordering Information:

Catalog No.	**Size**
50091	25 g
50090	125 g
50094	500 g

For more information on NuSieve® 3:1 Agarose, contact Technical Service at (800) 521-0390 or visit our website at **www.Lonza.com.**

Related Products:
DNA Ladders
DNA Markers
RNA Markers
GelStar® Nucleic Acid Gel Stain
NuSieve® GTG® Agarose
AccuGENE® TBE and TAE Buffers
The Sourcebook

For Laboratory Use.

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

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