

# Microwave Instructions for Agarose Preparation (for Denville® Agarose LE)

## Denville Scientific

### Abstract

Denville LE Agarose is an all purpose agarose for routine nucleic acid electrophoresis of fragments between 500bp-23,000 bp.

Denville LE Agarose has no detectable DNase or RNase activity.

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## Guidelines

### Introduction

Denville LE Agarose is an all purpose agarose for routine nucleic acid electrophoresis of fragments between 500bp-23,000 bp. Denville LE Agarose has no detectable DNase or RNase activity.

### Analytical Specifications

Gelling temperature (1.5%)	36°C ±1.5°C
Melting temperature (1.5%)	>90°C
Gel strength (1%)	>1,200 g/cm <sup>2</sup>

### Applications

Analytical electrophoresis of DNA and RNA >1,000 bp

Blotting of DNA and RNA

### Suggested Agarose Concentrations

Size Range (Base Pairs)	Final Agarose Concentration (%)	
	1X TAE Buffer	1X TBE Buffer
1,000-23,000	0.60	0.50
800-10,000	0.80	0.70
400-8,000	1.00	0.85
300-7,000	1.20	1.00
200-4,000	1.50	1.25
100-3,000	2.00	1.75

## Dye Mobility Table

Migration of double-stranded DNA in relation to Bromophenol Blue (BPB) and Xylene Cyanol (XC) in Denville LE Agarose Gels.

1X TAE Buffer		% Agarose	1X TBE Buffer	
XC	BPB		XC	BPB
24,800	2,900	0.30	19,400	2,850
11,000	1,650	0.50	12,000	1,350
10,200	1,000	0.75	9,200	720
6,100	500	1.00	4,100	400
3,560	370	1.25	2,500	260
2,800	300	1.50	1,800	200
1,800	200	1.75	1,100	110
1,300	150	2.00	850	70

## Materials

Agarose [GR140-500](#) by [Denville Scientific Inc.](#)

## Protocol

### Microwave Instructions for Agarose Preparation

#### Step 1.

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

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##### Step 2.

Add room temperature 1X or 0.5X electrophoresis buffer and a stir bar to the beaker.

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##### Step 3.

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

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##### Step 4.

Remove the stir bar if not Teflon® coated.

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##### Step 5.

Weigh the beaker and solution before heating.

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##### Step 6.

Cover the beaker with plastic wrap.

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##### Step 7.

Pierce a small hole in the plastic wrap for ventilation.

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##### Step 8.

Heat the beaker in the microwave oven on **High** power until bubbles appear.

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##### Step 9.

Remove the beaker from the microwave oven. **Caution: Any microwaved solution may become superheated and foam over when agitated.**

#### Microwave Instructions for Agarose Preparation

##### Step 10.

**GENTLY** swirl the beaker to resuspend any settled powder and gel pieces.

#### Microwave Instructions for Agarose Preparation

### Step 11.

Reheat the beaker on **HIGH** power until the solution comes to a boil.

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### Step 12.

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

 **DURATION**

00:01:00

#### Microwave Instructions for Agarose Preparation

### Step 13.

Remove the beaker from the microwave oven.

#### Microwave Instructions for Agarose Preparation

### Step 14.

**GENTLY** swirl the beaker to thoroughly mix the agarose solution.

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### Step 15.

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

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### Step 16.

Mix thoroughly.

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### Step 17.

Cool the solution to 50°C-60°C prior to casting.

## Warnings

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.