

## NEBuffer Set 1.1, 2.1, 3.1 & CutSmart®



1-800-632-7799  
info@neb.com  
www.neb.com



# B7200S

1.25 ml of each Lot: 0081506  
Store at -20°C Exp: 6/18

**Description:** New England Biolabs provides a color-coded 10X NEBuffer with each restriction endonuclease to ensure optimal (100%) activity. Most of our enzymes are supplied with one of four standard NEBuffers. Occasionally, an enzyme has specific buffer requirements not met by one of the four standard NEBuffers, in which case the enzyme is supplied with its own unique NEBuffer.

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### NEBuffer Color Code:

NEBuffer 1.1: Yellow  
NEBuffer 2.1: Blue  
NEBuffer 3.1: Red  
CutSmart: Green

### 1X NEBuffer 1.1:

10 mM Bis Tris Propane-HCl  
10 mM MgCl<sub>2</sub>  
100 µg/ml BSA  
pH 7.0 @ 25°C  
Supplied as a 10X concentrated stock

### 1X NEBuffer 2.1:

50 mM NaCl  
10 mM Tris-HCl  
10 mM MgCl<sub>2</sub>  
100 µg/ml BSA  
pH 7.9 @ 25°C  
Supplied as a 10X concentrated stock

### 1X NEBuffer 3.1:

100 mM NaCl  
50 mM Tris-HCl  
10 mM MgCl<sub>2</sub>  
100 µg/ml BSA  
pH 7.9 @ 25°C  
Supplied as a 10X concentrated stock

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100 mM NaCl  
50 mM Tris-HCl  
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pH 7.9 @ 25°C  
Supplied as a 10X concentrated stock

### 1X CutSmart Buffer:

50 mM Potassium acetate  
20 mM Tris-acetate  
10 mM Magnesium acetate  
100 µg/ml BSA  
pH 7.9 @ 25°C  
Supplied as a 10X concentrated stock

### Quality Control

**pH range:** The pH of 10X NEBuffer 1.1 is between pH 6.9 and 7.1. The pH of 10X NEBuffer 2.1, NEBuffer 3.1 and CutSmart Buffer is between pH 7.8 and 8.0.

### 16-hour Non-specific Nuclease Activity Assay:

A 50 µl reaction in 1X NEBuffer containing 1 µg of φX HaeIII digested DNA incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.

**Endonuclease (nicking) Activity Assay:** A 50 µl reaction in 1X NEBuffer containing 1 µg of supercoiled φX174 DNA incubated for 4 hours at 37°C results in < 10% conversion to the nicked form as determined by agarose gel electrophoresis.

### 1X CutSmart Buffer:

50 mM Potassium acetate  
20 mM Tris-acetate  
10 mM Magnesium acetate  
100 µg/ml BSA  
pH 7.9 @ 25°C  
Supplied as a 10X concentrated stock

### Quality Control

**pH range:** The pH of 10X NEBuffer 1.1 is between pH 6.9 and 7.1. The pH of 10X NEBuffer 2.1, NEBuffer 3.1 and CutSmart Buffer is between pH 7.8 and 8.0.

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**Endonuclease (nicking) Activity Assay:** A 50 µl reaction in 1X NEBuffer containing 1 µg of supercoiled φX174 DNA incubated for 4 hours at 37°C results in < 10% conversion to the nicked form as determined by agarose gel electrophoresis.

**Buffer Functional Assay:** A 50 µl reaction in 1X NEBuffer containing 1 µg of λ DNA and 1 unit of restriction enzyme, incubated for 1 hour at 37°C results in complete digestion of the substrate DNA as determined by agarose gel electrophoresis.

### RNase Activity (Extended Digestion): A

10 µl reaction in 1X NEBuffer with 40 ng RNA transcript is incubated for 16 hours at 37°C. After incubation for 16 hours, no detectable degradation of the RNA is observed as determined by gel electrophoresis using fluorescent detection.



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CERTIFICATE OF ANALYSIS

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