

## New England Biolabs Product Specification

<i>Product Name:</i>	<i>CutSmart<sup>®</sup> Buffer</i>
<i>Catalog #:</i>	<i>B7204S</i>
<i>Concentration:</i>	<i>10X Concentrate</i>
<i>Shelf Life:</i>	<i>36 months</i>
<i>Storage Temp:</i>	<i>-20°C</i>
<i>Composition (1X):</i>	<i>50 mM Potassium Acetate, 20 mM Tris Acetate, 10 mM Magnesium Acetate, 100 µg/ml BSA, (pH 7.9 @ 25°C)</i>
<i>Specification Version:</i>	<i>PS-B7204S v1.0</i>
<i>Effective Date:</i>	<i>14 Sep 2017</i>

### Assay Name/Specification (minimum release criteria)

**Conductivity (buffers/solutions)** - The conductivity of 10X CutSmart<sup>®</sup> Buffer is between 40 and 46 mS at 25°C.

**Endonuclease Activity (Nicking, Buffer)** - A 50 µl reaction in 1X CutSmart<sup>®</sup> Buffer containing 1 µg of supercoiled PhiX174 DNA incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.

**Functional Testing (Restriction Digest, Buffer)** - A 50 µl reaction in 1X CutSmart<sup>®</sup> Buffer containing 1 µg of Lambda dam- DNA and 1 unit of ClaI incubated for 1 hour at 37°C results in complete digestion of the substrate DNA as determined by agarose gel electrophoresis.

**Functional Testing (Restriction Digest, Buffer)** - A 50 µl reaction in 1X CutSmart<sup>®</sup> Buffer containing 1 µg of Lambda DNA and 1 unit of MscI incubated for 1 hour at 37°C results in complete digestion of the substrate DNA as determined by agarose gel electrophoresis.

**Non-Specific DNase Activity (16 hour, Buffer)** - A 50 µl reaction in 1X CutSmart<sup>®</sup> Buffer containing 1 µg of PhiX174-HaeIII DNA incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.

**pH (buffers/solutions)** - The pH of 10X CutSmart<sup>®</sup> Buffer is between pH 7.8 and 8.0 at 25°C.

**RNase Activity (Buffer)** - A 10 µl reaction in 1X CutSmart<sup>®</sup> Buffer containing 40 ng of a 300 base single-stranded RNA is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by fluorescent detection.

\* The BSA in this product has been granted an EDQM "Certificate of Suitability" from the European Directorate for the Quality of Medicines (# R1-CEP-2003-204-Rev00) and has been granted a USDA Certificate for Export of Bovine Blood Plasma/Serum for Manufacture into Pharmaceutical Products.



Date 14 Sep 2017

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