

## New England Biolabs Product Specification

<i>Product Name:</i>	<i>BstZ17I-HF<sup>®</sup></i>
<i>Catalog #:</i>	<i>R3594S/L</i>
<i>Concentration:</i>	<i>20,000 units/ml</i>
<i>Unit Definition:</i>	<i>One unit is defined as the amount of enzyme required to digest 1 µg of λ DNA in 1 hour at 37°C in a total reaction volume of 50 µl.</i>
<i>Shelf Life:</i>	<i>24 months</i>
<i>Storage Temp:</i>	<i>-20°C</i>
<i>Storage Conditions:</i>	<i>10 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 200 µg/ml BSA, 50 % Glycerol, (pH 7.4 @ 25°C)</i>
<i>Specification Version:</i>	<i>PS-R3594S/L v2.0</i>
<i>Effective Date:</i>	<i>01 Dec 2016</i>

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

**Non-Specific DNase Activity (16 Hour)** - A 50 µl reaction in CutSmart<sup>®</sup> Buffer containing 1 µg of Lambda DNA and a minimum of 100 units of BstZ17I-HF incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.

**Endonuclease Activity (Nicking)** - A 50 µl reaction in CutSmart<sup>®</sup> Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 units of BstZ17I-HF incubated for 4 hours at 37°C results in <20% conversion to the nicked form as determined by agarose gel electrophoresis.

**Exonuclease Activity (Radioactivity Release)** - A 50 µl reaction in CutSmart<sup>®</sup> Buffer containing 1 µg of a mixture of single and double-stranded [<sup>3</sup>H] *E. coli* DNA and a minimum of 100 units of BstZ17I-HF incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.

**Functional Testing (15 minute Digest)** - A 50 µl reaction in CutSmart<sup>®</sup> Buffer containing 1 µg of Lambda DNA and 1 µl of BstZ17I-HF incubated for 15 minutes at 37°C results in complete digestion as determined by agarose gel electrophoresis.

**Ligation and Recutting (Terminal Integrity)** - After a 20-fold over-digestion of Lambda DNA with BstZ17I-HF, ~75% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, >95% can be recut with BstZ17I-HF.

**Protein Purity Assay (SDS-PAGE)** - BstZ17I-HF is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue 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 01 Dec 2016

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Director of Quality Control

