

## New England Biolabs Product Specification

<b>Product Name:</b>	<i>NsiI-HF</i>
<b>Catalog #:</b>	<i>R3127S/L</i>
<b>Concentration:</b>	<i>20,000 units/ml</i>
<b>Unit Definition:</b>	<i>One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA in 1 hour at 37°C in a total reaction volume of 50 µl.</i>
<b>Shelf Life:</b>	<i>24 months</i>
<b>Storage Temp:</b>	<i>-20 °C</i>
<b>Storage Conditions:</b>	<i>300 mM NaCl , 10 mM Tris-HCl (pH 7.4), 1 mM DTT , 0.1 mM EDTA , 50 % Glycerol , 500 µg/ml BSA</i>
<b>Specification Version:</b>	<i>PS-R3127S/L v1.0</i>
<b>Effective Date:</b>	<i>19 Dec 2014</i>

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

**Endonuclease Activity (Nicking)** - A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled ΦX174 DNA and a minimum of 100 units of NsiI-HF incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.

**Exonuclease Activity (Radioactivity Release)** - A 50 µl reaction in CutSmart™ 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 NsiI-HF incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.

**Functional Test (15 minute Digest)** - A 50 µl reaction in CutSmart™ Buffer containing 1 µg of Lambda DNA and 1 µl of NsiI-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 NsiI-HF, >95% 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 NsiI-HF.

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

**Protein Purity Assay (SDS-PAGE)** - NsiI-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 19 Dec 2014

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