

## New England Biolabs Certificate of Analysis

**Product Name:** BsiWI-HF<sup>®</sup>  
**Catalog Number:** R3553S  
**Concentration:** 20,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme required to digest 1 µg of PhiX174 DNA in 1 hour at 37°C in a total reaction volume of 50 µl.  
**Packaging Lot Number:** 10097020  
**Expiration Date:** 01/2023  
**Storage Temperature:** -20°C  
**Storage Conditions:** 300 mM NaCl, 10 mM Tris-HCl, 1 mM DTT, 0.1 mM EDTA, 50 % Glycerol, 500 µg/ml BSA, (pH 7.4 @ 25°C)  
**Specification Version:** PS-R3553S/L v1.0

| BsiWI-HF <sup>®</sup> Component List |                              |            |                      |
|--------------------------------------|------------------------------|------------|----------------------|
| NEB Part Number                      | Component Description        | Lot Number | Individual QC Result |
| R3553SVIAL                           | BsiWI-HF <sup>®</sup>        | 10097021   | Pass                 |
| B7204SVIAL                           | CutSmart <sup>®</sup> Buffer | 10092684   | Pass                 |
| B7024AVIAL                           | Gel Loading Dye, Purple (6X) | 10089393   | Pass                 |

| Assay Name/Specification   | Lot # 10097020 |
|--|----------------|
| <b>Endonuclease Activity (Nicking)</b><br>A 50 µl reaction in CutSmart <sup>®</sup> Buffer containing 1 µg of supercoiled pUC19 DNA and a minimum of 20 units of BsiWI-HF incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.              | Pass           |
| <b>Exonuclease Activity (Radioactivity Release)</b><br>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 BsiWI-HF incubated for 4 hours at 37°C releases <0.1% of the total radioactivity. | Pass           |
| <b>Functional Testing (15 minute Digest)</b><br>A 50 µl reaction in CutSmart <sup>®</sup> Buffer containing 1 µg of PhiX174 DNA and 1 µl of BsiWI-HF incubated for 15 minutes at 37°C results in complete digestion as determined by agarose gel electrophoresis.  | Pass           |
| <b>Ligation and Recutting (Terminal Integrity)</b><br>After a 20-fold over-digestion of PhiX174 DNA with BsiWI-HF, >95% of the DNA   | Pass           |

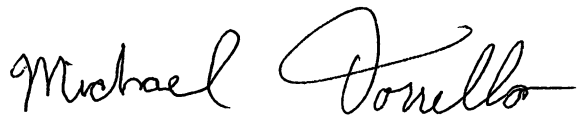
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|--|----------------|
| fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, >95% can be recut with BsiWI-HF.  |                |
| <b>Non-Specific DNase Activity (16 Hour)</b><br>A 50 µl reaction in CutSmart® Buffer containing 1 µg of PhiX174 DNA and a minimum of 100 units of BsiWI-HF incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis. | <b>Pass</b>    |
| <b>Protein Purity Assay (SDS-PAGE)</b><br>BsiWI-HF is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.  | <b>Pass</b>    |

This product has been tested and shown to be in compliance with all specifications.

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28 Jan 2021



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