

## New England Biolabs Certificate of Analysis


**Product Name:** *Bsu DNA Polymerase, Large Fragment*  
**Catalog Number:** *M0330L*  
**Concentration:** *5,000 U/ml*  
**Unit Definition:** *One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into acid insoluble material in 30 minutes at 37°C.*  
**Lot Number:** *10056744*  
**Expiration Date:** *10/2021*  
**Storage Temperature:** *-20°C*  
**Storage Conditions:** *25 mM Tris-HCl , 50 mM NaCl , 1 mM DTT , 0.1 mM EDTA , 50 % Glycerol, (pH 7.4 @ 25°C)*  
**Specification Version:** *PS-M0330S/L v1.0*

Bsu DNA Polymerase, Large Fragment Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0330LVIAL	Bsu DNA Polymerase, Large Fragment	10052122	Pass
B7002SVIAL	NEBuffer™ 2	10052180	Pass

Assay Name/Specification	Lot # 10056744
<p><b>Exonuclease Activity (Radioactivity Release)</b>            A 50 µl reaction in NEBuffer 2 containing 1 µg of a mixture of single and double-stranded [<sup>3</sup>H] E. coli DNA and a minimum of 50 units of Bsu DNA Polymerase, Large Fragment incubated for 4 hours at 37°C releases &lt;0.1% of the total radioactivity.</p>	Pass
<p><b>Non-Specific DNase Activity (16 Hour)</b>            A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 5 units of Bsu DNA Polymerase, Large Fragment incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p>	Pass
<p><b>Phosphatase Activity (pNPP)</b>            A 200 µl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl<sub>2</sub> containing 2.5 mM p-Nitrophenyl Phosphate (pNPP) and a minimum of 100 units Bsu DNA Polymerase, Large Fragment incubated for 4 hours at 37°C yields &lt;0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	Pass
<p><b>Protein Purity Assay (SDS-PAGE)</b></p>	Pass

Assay Name/Specification	Lot # 10056744
<p>Bsu DNA Polymerase, Large Fragment is <math>\geq 97\%</math> pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	
<p><b>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 5 units of Bsu DNA Polymerase, Large Fragment is screened for the presence of E. coli genomic DNA using SYBR® Green qPCR with primers specific for the E. coli 16S rRNA locus. Results are quantified using a standard curve generated from purified E. coli genomic DNA. The measured level of E. coli genomic DNA contamination is <math>\leq 1</math> E. coli genome.</p>	<b>Pass</b>
<p><b>RNase Activity (Extended Digestion)</b> A 10 <math>\mu</math>l reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 <math>\mu</math>l of Bsu DNA Polymerase, Large Fragment is incubated at 37°C. After incubation for 16 hours, &gt;90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</p>	<b>Pass</b>
<p><b>Single Stranded DNase Activity (FAM-Labeled Oligo)</b> A 50 <math>\mu</math>l reaction in NEBuffer 2 containing a 10 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 50 units of Bsu DNA Polymerase, Large Fragment incubated for 30 minutes at 37°C yields &lt;10% degradation as determined by capillary electrophoresis.</p>	<b>Pass</b>
<p><b>Endonuclease Activity (Nicking)</b> A 50 <math>\mu</math>l reaction in NEBuffer 2 containing 1 <math>\mu</math>g of supercoiled PhiX174 DNA and a minimum of 50 units of Bsu DNA Polymerase, Large Fragment incubated for 4 hours at 37°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	<b>Pass</b>

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



Green Duquette  
Production Scientist  
12 Sep 2019



Michael Tonello  
Packaging Quality Control Inspector  
15 Oct 2019