

## New England Biolabs Certificate of Analysis

**Product Name:** *Bst 2.0 WarmStart® DNA Polymerase (Glycerol-free)*  
**Catalog Number:** *M0402L*  
**Concentration:** *120,000 U/ml*  
**Unit Definition:** *One unit is defined as the amount of enzyme that will incorporate 25 nmol of dNTP into acid insoluble material in 30 minutes at 65°C.*  
**Packaging Lot Number:** *10225700*  
**Expiration Date:** *01/2026*  
**Storage Temperature:** *-80°C*  
**Storage Conditions:** *10 mM Tris-HCl, 50 mM KCl, 0.1 mM EDTA, 1 mM DTT, 0.1 % Triton® X-100, (pH 7.1 @ 25°C)*  
**Specification Version:** *PS-M0402L v1.0*

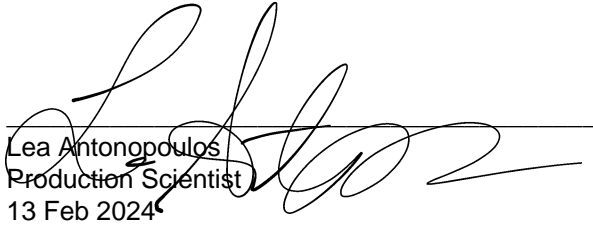
<b>Bst 2.0 WarmStart® DNA Polymerase (Glycerol-free) Component List</b>			
<b>NEB Part Number</b>	<b>Component Description</b>	<b>Lot Number</b>	<b>Individual QC Result</b>
M0402LVIAL	Bst 2.0 WarmStart® DNA Polymerase (Glycerol-free)	10225689	<b>Pass</b>
B1714SVIAL	Isothermal Amplification Buffer (Lyo-compatible)	10225701	<b>Pass</b>

<b>Assay Name/Specification</b>	<b>Lot # 10225700</b>
<p><b>Endonuclease Activity (Nicking)</b>            A 50 µl reaction in ThermoPol® Reaction Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 500 units of Bst 2.0 DNA Polymerase (Glycerol Free) incubated for 4 hours at 65°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	<b>Pass</b>
<p><b>Exonuclease Activity (Radioactivity Release)</b>            A 50 µl reaction in ThermoPol® Reaction Buffer containing 1 µg of a mixture of single and double-stranded [<sup>3</sup>H] E. coli DNA and a minimum of 500 units of Bst 2.0 DNA Polymerase (Glycerol Free) incubated for 4 hours at 65°C releases &lt;0.1% of the total radioactivity.</p>	<b>Pass</b>
<p><b>Functional Testing (DNA-LAMP)</b>            A 25 µl LAMP reaction with 8 units of Bst 2.0 WarmStart® DNA Polymerase (Glycerol-free), 10 ng of genomic DNA and 1X LAMP fluorescent dye results in a threshold time of ≤ 20 minutes as determined by fluorescent detection.</p>	<b>Pass</b>

Assay Name/Specification	Lot # 10225700
<p><b>Functional Testing (RT-LAMP)</b> A 25 µl RT-LAMP reaction with 8 units of Bst 2.0 WarmStart® DNA Polymerase (Glycerol-free), 10 ng of genomic RNA and 1X LAMP fluorescent dye results in a threshold time of ≤ 20 minutes as determined by fluorescent detection.</p>	<b>Pass</b>
<p><b>Inhibition of Primer Extension (Hot Start)</b> A 50 µl reaction in Isothermal Amplification Buffer containing 6 mM MgSO<sub>4</sub> and 1.4 mM dNTPs in the presence of 1.6 µM of a fluorescent internally labeled oligonucleotide and a minimum of 16 units of Bst 2.0 WarmStart® DNA Polymerase (Glycerol Free) incubated for 2 hours at 25°C yields &lt;5% extension as determined by capillary electrophoresis.</p>	<b>Pass</b>
<p><b>Non-Specific DNase Activity (16 Hour)</b> A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 or T7 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 120 units of Bst 2.0 WarmStart® DNA Polymerase (Glycerol-free) incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p>	<b>Pass</b>
<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 of Bst 2.0 DNA Polymerase (Glycerol Free) incubated for 4 hours at 37°C yields &lt;0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	<b>Pass</b>
<p><b>Protein Purity Assay (SDS-PAGE)</b> Bst 2.0 DNA Polymerase (Glycerol Free) is ≥ 99% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	<b>Pass</b>
<p><b>RNase Activity (Extended Digestion)</b> A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 120 units of Bst 2.0 WarmStart® DNA Polymerase (Glycerol Free) 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>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 120 units of Bst 2.0 WarmStart® DNA Polymerase (Glycerol Free) 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 ≤ 1 E. coli genome.</p>	<b>Pass</b>

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

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