

New England Biolabs Certificate of Analysis

Product Name: ThermoPol® II (Mg-free) Reaction Buffer Pack
Catalog Number: B9005S
Concentration: 10 X Concentrate
Lot Number: 10034649
Expiration Date: 01/2022
Storage Temperature: -20°C
Specification Version: PS-B9005S v1.0
Composition (1X): 20 mM Tris-HCl, 10 mM (NH₄)₂SO₄, 10 mM KCl, 0.1 % Triton®X-100, (pH 8.8 @ 25°C)

ThermoPol® II (Mg-free) Reaction Buffer Pack Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
B9005SVIAL	ThermoPol® II (Mg-free) Reaction Buffer Pack	0021803	Pass
B1003SVIAL	Magnesium Sulfate (MgSO ₄) Solution	0021701	Pass

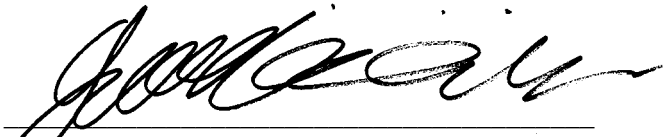
Assay Name/Specification	Lot # 10034649
<p>Phosphatase Activity (pNPP, Buffer) A 200 µl reaction in 1M Diethanolamine @ pH 9.8 and 0.5 mM MgCl₂ containing 2.5 mM p-Nitrophenyl Phosphate (pNPP) and a minimum of 40 µl ThermoPol® II (Mg-free) Reaction Buffer incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	Pass
<p>qPCR DNA Contamination (E. coli Genomic, Buffer) A minimum of 1 µl of ThermoPol® II (Mg-free) Reaction Buffer 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>	Pass
<p>RNase Activity (Extended Digestion) A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of ThermoPol® II (Mg-free) Reaction Buffer is incubated at 37°C. After incubation for 4 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</p>	Pass
<p>Endonuclease Activity (Nicking, Mg-Free Buffer) A 50 µl reaction in 2X ThermoPol® II (Mg-free) Reaction Buffer and 4 mM MgSO₄</p>	Pass

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<p>containing 1 µg of supercoiled PhiX174 DNA incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	
<p>Non-Specific DNase Activity (16 hour, Mg-Free Buffer) A 50 µl reaction in 2X ThermoPol® II (Mg-free) Reaction Buffer and 4 mM MgSO₄ containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA 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>PCR Amplification (5 kb Lambda DNA, Mg-Free Buffer) A 50 µl reaction in ThermoPol® II (Mg-free) Reaction Buffer and 2 mM MgSO₄ in the presence of 200 µM dNTPs and 0.2 µM primers containing 5 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 5 kb product.</p>	Pass
<p>pH (buffers/solutions) The pH of 10X ThermoPol® II (Mg-free) Reaction Buffer is between pH 8.7 and 8.9 at 25°C.</p>	Pass

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



Christie Vazquez
Production Scientist
22 Jan 2019



Jay Minichiello
Packaging Quality Control Inspector
22 Jan 2019