

New England Biolabs Certificate of Analysis

Product Name: ThermoPol[®] Reaction Buffer Pack
Catalog Number: B9004S
Concentration: 10 X Concentrate
Packaging Lot Number: 10103186
Expiration Date: 02/2026
Storage Temperature: -20°C
Specification Version: PS-B9004S v2.0
Composition (1X): 20 mM Tris-HCl, 10 mM (NH₄)₂SO₄, 10 mM KCl, 2 mM MgSO₄, 0.1 % Triton[®]X-100, (pH 8.8 @ 25°C)

ThermoPol [®] Reaction Buffer Pack Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
B9004SVIAL	ThermoPol [®] Reaction Buffer Pack	10102088	Pass
B1003SVIAL	Magnesium Sulfate (MgSO ₄) Solution	10096258	Pass

Assay Name/Specification	Lot # 10103186
pH (buffers/solutions) The pH of 10X ThermoPol [®] Reaction Buffer is between pH 8.7 and 8.9 at 25°C.	Pass
PCR Amplification (5 kb Lambda DNA, Buffer) A 50 µl reaction in ThermoPol [®] Reaction Buffer 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.	Pass
qPCR DNA Contamination (E. coli Genomic, Buffer) A minimum of 1 µl of ThermoPol [®] 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.	Pass
Endonuclease Activity (Nicking, Buffer) A 50 µl reaction in 2X ThermoPol [®] Reaction Buffer 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.	Pass
RNase Activity (Extended Digestion)	Pass

Assay Name/Specification	Lot # 10103186
<p>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® 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>	
<p>Non-Specific DNase Activity (16 hour, Buffer) A 50 µl reaction in 2X ThermoPol® Reaction Buffer containing 1 µg of T3 or T7 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>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® Reaction Buffer incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	Pass

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

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Production Scientist
29 Mar 2021



Michael Tonello
Packaging Quality Control Inspector
29 Mar 2021