

## New England Biolabs Certificate of Analysis

**Product Name:** Taq DNA Polymerase with Standard Taq Buffer  
**Catalog Number:** M0273E  
**Concentration:** 5,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme that will incorporate 15 nmol of dNTP into acid insoluble material in 30 minutes at 75°C.  
**Packaging Lot Number:** 10094229  
**Expiration Date:** 06/2022  
**Storage Temperature:** -20°C  
**Storage Conditions:** 10 mM Tris-HCl , 100 mM KCl , 1 mM DTT , 0.1 mM EDTA , 0.5 % Tween® 20 , 0.5 % IGEPAL® CA-630 , 50 % Glycerol, (pH 7.4 @ 25°C)  
**Specification Version:** PS-M0273S/L/X/E v2.0

| Taq DNA Polymerase with Standard Taq Buffer Component List |   |            |                      |
|--|---|------------|----------------------|
| NEB Part Number  | Component Description                       | Lot Number | Individual QC Result |
| M0273X   | Taq DNA Polymerase with Standard Taq Buffer | 10091666   | Pass                 |

| Assay Name/Specification  | Lot # 10094229 |
|---|----------------|
| <p><b>RNase Activity (Extended Digestion)</b><br/>           A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of Taq DNA Polymerase 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>   | Pass           |
| <p><b>Single Stranded DNase Activity (FAM-Labeled Oligo)</b><br/>           A 50 µl reaction in ThermoPol® Reaction Buffer containing a 10 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 25 units of Taq DNA Polymerase incubated for 30 minutes at 37°C and 75°C yields &lt;10% degradation as determined by capillary electrophoresis.</p>   | Pass           |
| <p><b>qPCR DNA Contamination (E. coli Genomic)</b><br/>           A minimum of 5 units of Taq DNA Polymerase 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><b>Protein Purity Assay (SDS-PAGE)</b></p>   | Pass           |

| Assay Name/Specification  | Lot # 10094229 |
|---|----------------|
| Taq DNA Polymerase is $\geq 99\%$ pure as determined by SDS-PAGE analysis using Coomassie Blue detection.   |                |
| <p><b>Non-Specific DNase Activity (16 Hour)</b><br/>A 50 <math>\mu</math>l reaction in NEBuffer 2 containing 1 <math>\mu</math>g of T3 or T7 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 5 units of Taq DNA Polymerase 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><br/>A 200 <math>\mu</math>l 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 Taq DNA Polymerase 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>Endonuclease Activity (Nicking)</b><br/>A 50 <math>\mu</math>l reaction in ThermoPol<sup>®</sup> Reaction Buffer containing 1 <math>\mu</math>g of supercoiled PhiX174 DNA and a minimum of 20 units of Taq DNA Polymerase incubated for 4 hours at 37°C and 75°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>                                | <b>Pass</b>    |
| <p><b>PCR Amplification (5.0 kb Lambda DNA)</b><br/>A 50 <math>\mu</math>l reaction in Standard Taq Reaction Buffer in the presence of 200 <math>\mu</math>M dNTPs and 0.2 <math>\mu</math>M primers containing 5 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 5.0 kb product.</p>  | <b>Pass</b>    |

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

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23 Dec 2020



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23 Dec 2020