

## New England Biolabs Certificate of Analysis

**Product Name:** Taq DNA Polymerase with Standard Taq Buffer  
**Catalog Number:** M0273X  
**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:** 10148691  
**Expiration Date:** 01/2024  
**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
M0273XVIAL	Taq DNA Polymerase with Standard Taq Buffer	10139787	Pass
B9014SVIAL	Standard Taq Reaction Buffer Pack	10143506	Pass

Assay Name/Specification	Lot # 10148691
<p><b>Single Stranded DNase Activity (FAM-Labeled Oligo)</b>            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>Endonuclease Activity (Nicking)</b>            A 50 µl reaction in ThermoPol® Reaction Buffer containing 1 µg 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>	Pass
<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 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>	Pass
<p><b>Protein Purity Assay (SDS-PAGE)</b></p>	Pass

Assay Name/Specification	Lot # 10148691
<p>Taq DNA Polymerase is <math>\geq 99\%</math> pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	
<p><b>Phosphatase Activity (pNPP)</b> 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>PCR Amplification (5.0 kb Lambda DNA)</b> 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>
<p><b>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 5 units of Taq DNA Polymerase is screened for the presence of E. coli genomic DNA using SYBR<sup>®</sup> 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 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>	<b>Pass</b>

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

One or more products referenced in this document may be covered by a 3rd-party trademark. Please visit [www.neb.com/trademarks](http://www.neb.com/trademarks) for additional information.

*Christie Vazquez*

Christie Vazquez  
Production Scientist  
13 Apr 2022

*Michael Tonello*

Michael Tonello  
Packaging Quality Control Inspector  
13 Apr 2022