

## New England Biolabs Certificate of Analysis

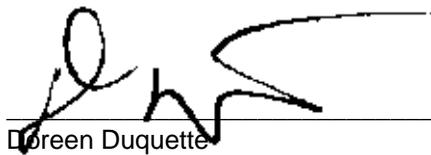
**Product Name:** *Taq 2X Master Mix*  
**Catalog Number:** *M0270L*  
**Concentration:** *2 X Concentrate*  
**Lot Number:** *10050340*  
**Expiration Date:** *07/2021*  
**Storage Temperature:** *-20°C*  
**Specification Version:** *PS-M0270S/L v1.0*  
**Composition (1X):** *10 mM Tris-HCl (pH 8.6 @ 25°C), 50 mM KCl, 1.5 mM MgCl<sub>2</sub>, 0.2 mM dATP, 0.2 mM dCTP, 0.2 mM dGTP, 0.2 mM dTTP, 5 % Glycerol, 0.08 % IGEPAL® CA-630, 0.05 % Tween® 20, 25 units/ml Taq DNA Polymerase*

| Taq 2X Master Mix Component List |                                                  |            |                      |
|----------------------------------|--------------------------------------------------|------------|----------------------|
| NEB Part Number                  | Component Description                            | Lot Number | Individual QC Result |
| M0270SVIAL                       | Taq 2X Master Mix                                | 10046985   | Pass                 |
| B9021SVIAL                       | Magnesium Chloride (MgCl <sub>2</sub> ) Solution | 10038440   | Pass                 |

| Assay Name/Specification                                                                                                                                                                                                                                                                                                                                    | Lot # 10050340 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <p><b>Non-Specific DNase Activity (16 hour, Buffer)</b><br/>A 50 µl reaction in 1X Taq Master Mix 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><b>PCR Amplification (5 kb Lambda, Master Mix)</b><br/>A 25 µl reaction in 1X Taq Master Mix and 0.2 µM primers containing 5 ng Lambda DNA for 25 cycles of PCR amplification results in the expected 5 kb product.</p>                                                                                                                                  | Pass           |
| <p><b>Phosphatase Activity (pNPP)</b><br/>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 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> | Pass           |
| <p><b>Protein Purity Assay (SDS-PAGE)</b><br/>Taq DNA Polymerase is ≥ 99% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>                                                                                                                                                                                                       | Pass           |

| Assay Name/Specification                                                                                                                                                                                                                                                                                                                                                                                                         | Lot # 10050340 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <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 <math>\leq 1</math> E. coli genome.</p> | <b>Pass</b>    |
| <p><b>Endonuclease Activity (Nicking)</b><br/>A 50 <math>\mu</math>l reaction in ThermoPol® 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>Single Stranded DNase Activity (FAM-Labeled Oligo)</b><br/>A 50 <math>\mu</math>l 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>                                                | <b>Pass</b>    |
| <p><b>RNase Activity (Extended Digestion)</b><br/>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 2X Master Mix is incubated at 37°C. After incubation for 4 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.



Green Duquette  
Production Scientist  
15 Mar 2019



Michael Tonello  
Packaging Quality Control Inspector  
25 Jul 2019