240 County Road
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New England Biolabs
Certificate of Analysis

Product Name:	*Taq 2X Master Mix*
Catalog Number:	*M0270L*
Concentration:	*2 X Concentrate*
Packaging Lot Number:	*10257553*
Expiration Date:	*09/2026*
Storage Temperature:	*-20°C*
Specification Version:	*PS-M0270S/L/G/V v3.0*
Composition (1X):	*10 mM Tris-HCl (pH 8.6 @ 25°C), 50 mM KCl, 1.5 mM MgCl2, 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	10256787	**Pass**
B9021SVIAL	Magnesium Chloride ($MgCl_2$) Solution	10221498	**Pass**

Assay Name/Specification	Lot # 10257553
Endonuclease Activity (Nicking) 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 75ºC results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	**Pass**
Non-Specific DNase Activity (16 hour, Buffer) A 50 µl reaction in 1X Taq Master Mix containing 1 µg of T3 or T7 DNA in addition to a reaction containing Lambda-HindIII DNA incubated for 16 hours at 37ºC results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**Pass**
PCR Amplification (5 kb Lambda, Master Mix) 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.	**Pass**
Phosphatase Activity (pNPP) A 200 µl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl2 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 <0.0001 unit of alkaline phosphatase activity	**Pass**

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Assay Name/Specification	Lot # 10257553
as determined by spectrophotometric analysis.	
Protein Purity (Microfluidic Electrophoresis) Taq DNA Polymerase is ≥97% pure as determined by microfluidic electrophoresis.	**Pass**
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 Taq 2X Master Mix is incubated at 37ºC. After incubation for 4 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	**Pass**
Single Stranded DNase Activity (FAM-Labeled Oligo) 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 <10% degradation as determined by capillary electrophoresis.	**Pass**
qPCR DNA Contamination (E. coli Genomic) 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.	**Pass**

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

Trinh Nguyen
Production Scientist
30 Sep 2024

Michael Tonello
Packaging Quality Control Inspector
03 Oct 2024