

## New England Biolabs Certificate of Analysis

**Product Name:** Deep Vent™ DNA Polymerase  
**Catalog Number:** M0258S  
**Concentration:** 2,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into acid insoluble material in 30 minutes at 75°C.  
**Packaging Lot Number:** 10246055  
**Expiration Date:** 04/2026  
**Storage Temperature:** -20°C  
**Storage Conditions:** 10 mM Tris-HCl , 100 mM KCl , 1 mM DTT , 0.1 mM EDTA , 0.1 % Triton®X-100 , 50 % Glycerol, (pH 7.4 @ 25°C)  
**Specification Version:** PS-M0258S/L v2.0

Deep Vent™ DNA Polymerase Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0258SVIAL	Deep Vent® DNA Polymerase	10239369	Pass
B9004SVIAL	ThermoPol® Reaction Buffer Pack	10231728	Pass
B1003SVIAL	Magnesium Sulfate (MgSO <sub>4</sub> ) Solution	10233989	Pass

Assay Name/Specification	Lot # 10246055
<p><b>Endonuclease Activity (Nicking, Polymerase, dNTP)</b>            A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 400 µM dNTPs containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 units of Deep Vent® DNA Polymerase incubated for 4 hours at 37°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	<b>Pass</b>
<p><b>PCR Amplification (2.0 kb Lambda DNA)</b>            A 25 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dNTPs and 0.2 µM primers containing 5 ng Lambda DNA with 0.5 units of Deep Vent® DNA Polymerase for 30 cycles of PCR amplification results in the expected 2.0 kb product.</p>	<b>Pass</b>
<p><b>Phosphatase Activity (pNPP)</b>            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 Deep Vent® 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>

Assay Name/Specification	Lot # 10246055
<p><b>Protein Purity Assay (SDS-PAGE)</b> Deep Vent® DNA Polymerase is ≥ 98% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	<b>Pass</b>
<p><b>RNase Activity (Extended Digestion)</b> A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of Deep Vent® 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>
<p><b>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 2 units of Deep Vent® 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>	<b>Pass</b>

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

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Trinh Nguyen  
Production Scientist  
26 Apr 2024



Josh Hersey  
Packaging Quality Control Inspector  
24 Jul 2024