

## New England Biolabs Certificate of Analysis

**Product Name:** Vent® DNA Polymerase  
**Catalog Number:** M0254L  
**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.  
**Lot Number:** 10036012  
**Expiration Date:** 01/2021  
**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-M0254S/L v1.0

Vent® DNA Polymerase Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0254LVIAL	Vent® DNA Polymerase	10032871	Pass
B9004SVIAL	ThermoPol® Reaction Buffer Pack	0031712	Pass
B1003SVIAL	Magnesium Sulfate (MgSO <sub>4</sub> ) Solution	0021701	Pass

Assay Name/Specification	Lot # 10036012
<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 pUC19 DNA and a minimum of 20 units of Vent® DNA Polymerase incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
<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 0.5 µM primers containing 5 ng Lambda DNA with 0.25 units of Vent® DNA Polymerase for 25 cycles of PCR amplification results in the expected 2.0 kb product.	Pass
<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 Vent® DNA Polymerase incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	Pass
<b>Protein Purity Assay (SDS-PAGE)</b>	Pass

Assay Name/Specification	Lot # 10036012
<p>Vent® DNA Polymerase is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p> <p><b>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 2 units of 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> <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 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>	<p style="text-align: center;"><b>Pass</b></p> <p style="text-align: center;"><b>Pass</b></p>

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



Christie Vazquez  
Production Scientist  
30 Jan 2019



Michael Tonello  
Packaging Quality Control Inspector  
01 Apr 2019