

## New England Biolabs Certificate of Analysis

**Product Name:** Deep Vent® (exo-) DNA Polymerase  
**Catalog Number:** M0259S  
**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 30 minutes at 75°C.  
**Lot Number:** 10015379  
**Expiration Date:** 06/2020  
**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-M0259S/L v1.0

Deep Vent® (exo-) DNA Polymerase Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0259SVIAL	Deep Vent® (exo-) DNA Polymerase	10009886	Pass
B9004SVIAL	ThermoPol® Reaction Buffer Pack	0031712	Pass
B1003SVIAL	Magnesium Sulfate (MgSO <sub>4</sub> ) Solution	0021701	Pass

Assay Name/Specification	Lot # 10015379
<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 1 unit of Deep Vent™ (exo-) DNA Polymerase for 25 cycles of PCR amplification results in the expected 2.0 kb product.</p>	Pass
<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 Deep Vent™ (exo-) 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>            Deep Vent™ (exo-) DNA Polymerase is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	Pass
<p><b>Non-Specific DNase Activity (16 Hour)</b>            A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 DNA in addition to a reaction</p>	Pass

Assay Name/Specification	Lot # 10015379
<p>containing Lambda-HindIII DNA and a minimum of 2 units of Deep Vent™ (exo-) 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>	
<p><b>Exonuclease Activity (Radioactivity Release)</b> A 50 µl reaction in ThermoPol® Reaction Buffer containing 1 µg of a mixture of single and double-stranded [<sup>3</sup>H] E. coli DNA and a minimum of 20 units of Deep Vent™ (exo-) DNA Polymerase incubated for 4 hours at either 37°C or 75°C releases &lt;0.1% of the total radioactivity.</p>	<b>Pass</b>
<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 Deep Vent™ (exo-) DNA Polymerase incubated for 4 hours at either 37°C or 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> A 20 µl reaction in ThermoPol® Reaction Buffer containing a 10 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 20 units of Deep Vent™ (exo-) DNA Polymerase incubated for 30 minutes at either 37°C or 75°C yields &lt;10% degradation as determined by capillary electrophoresis.</p>	<b>Pass</b>

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



Lynne Apone  
Production Scientist  
09 Jul 2018



Mary Conlon  
Packaging Quality Control Inspector  
13 Jul 2018