

## New England Biolabs Certificate of Analysis

*Product Name:* Deep Vent<sup>®</sup> DNA Polymerase  
*Catalog #:* M0258S/L  
*Concentration:* 2,000 units/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 #:* 0181706  
*Assay Date:* 06/2017  
*Expiration Date:* 6/2019  
*Storage Temp:* -20°C  
*Storage Conditions:* 10 mM Tris-HCl, 100 mM KCl, 1 mM DTT, 0.1 mM EDTA, 0.1 % Triton<sup>®</sup>X-100, 50 % Glycerol, (pH 7.4 @ 25°C)  
*Specification Version:* PS-M0258S/L v1.0  
*Effective Date:* 22 Apr 2016

Assay Name/Specification (minimum release criteria)	Lot #0181706
<b>Endonuclease Activity (Nicking, Polymerase, dNTP)</b> - A 50 µl reaction in ThermoPol <sup>®</sup> 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 <sup>™</sup> DNA Polymerase incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	<b>Pass</b>
<b>PCR Amplification (2.0 kb Lambda DNA)</b> - A 25 µl reaction in ThermoPol <sup>®</sup> 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 <sup>™</sup> DNA Polymerase for 30 cycles of PCR amplification results in the expected 2.0 kb product.	<b>Pass</b>
<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 nM <i>p</i> -Nitrophenyl Phosphate (pNPP) and a minimum of 100 units Deep Vent <sup>™</sup> DNA Polymerase incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	<b>Pass</b>
<b>Protein Purity Assay (SDS-PAGE)</b> - Deep Vent <sup>™</sup> DNA Polymerase is ≥ 98% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	<b>Pass</b>
<b>qPCR DNA Contamination (<i>E. coli</i> Genomic)</b> - A minimum of 2 units of Deep Vent <sup>™</sup> DNA Polymerase is screened for the presence of <i>E. coli</i> genomic DNA using SYBR <sup>®</sup> Green qPCR with primers specific for the <i>E. coli</i> 16S rRNA locus. Results are quantified using a standard curve generated from purified <i>E. coli</i> genomic DNA. The measured level of <i>E. coli</i> genomic DNA contamination is ≤ 1 <i>E. coli</i> genome.	<b>Pass</b>

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Assay Name/Specification (minimum release criteria)	Lot #0181706
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 Deep Vent™ DNA Polymerase is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	<b>Pass</b>



Authorized by  
Melanie Fortier  
22 Apr 2016



Inspected by  
Tony Spear-Alfonso  
12 Jun 2017

