

New England Biolabs Product Specification

Product Name:	<i>Deep Vent[®] DNA Polymerase</i>
Catalog #:	<i>M0258S/L</i>
Concentration:	<i>2,000 units/ml</i>
Unit Definition:	<i>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.</i>
Shelf Life:	<i>24 months</i>
Storage Temp:	<i>-20°C</i>
Storage Conditions:	<i>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)</i>
Specification Version:	<i>PS-M0258S/L v2.0</i>
Effective Date:	<i>23 Jan 2018</i>

Assay Name/Specification (minimum release criteria)

Endonuclease Activity (Nicking, Polymerase, dNTP) - 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 <10% conversion to the nicked form as determined by agarose gel electrophoresis.

PCR Amplification (2.0 kb Lambda DNA) - 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.

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 Deep Vent[®] DNA Polymerase incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.

Protein Purity Assay (SDS-PAGE) - Deep Vent[®] DNA Polymerase is ≥ 98% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.

qPCR DNA Contamination (E. coli Genomic) - 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.



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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.
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Date 23 Jan 2018

Derek Robinson
Director of Quality Control

