

## New England Biolabs Certificate of Analysis

**Product Name:** Deoxynucleotide (dNTP) Solution Set  
**Catalog Number:** N0446S  
**Concentration:** 100 mM  
**Unit Definition:** N/A  
**Packaging Lot Number:** 10159624  
**Expiration Date:** 12/2023  
**Storage Temperature:** -20°C  
**Storage Conditions:** Supplied in Ultrapure water as a sodium salt (pH 7.5)  
**Specification Version:** PS-N0446S/V v3.0

Deoxynucleotide (dNTP) Solution Set Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
N0443SVIAL	dTTP	10132190	Pass
N0442SVIAL	dGTP	10132189	Pass
N0441SVIAL	dCTP	10132188	Pass
N0440SVIAL	dATP Solution	10158269	Pass

Assay Name/Specification	Lot # 10159624
<b>Endonuclease Activity (Nicking)</b> A 50 µl reaction in NEBuffer 2 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 1 µl of dATP, dCTP, dGTP, and dTTP incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
<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 dATP, dCTP, dGTP, and dTTP 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.	Pass
<b>Physical Purity (HPLC)</b> dATP, dCTP, dGTP, and dTTP is ≥ 99% pure as determined by HPLC analysis.	Pass
<b>PCR Amplification (2.0 kb Lambda, dNTPs)</b> A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP, dGTP, and dTTP and 0.2 µM primers containing 1 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 2.0 kb product.	Pass

Assay Name/Specification	Lot # 10159624
<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 16 µl of dATP, dCTP, dGTP, and dTTP 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>
<p><b>PCR Amplification (5.0 kb Lambda, dNTPs)</b> A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP, dGTP, and dTTP and 0.2 µM primers containing 1 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 5.0 kb product.</p>	<b>Pass</b>
<p><b>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 1 µl of dATP, dCTP, dGTP, and dTTP 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>
<p><b>Non-Specific DNase Activity (16 Hour)</b> A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 or T7 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 4 µl of dATP, dCTP, dGTP, and dTTP incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p>	<b>Pass</b>
<p><b>PCR Amplification (0.5 kb Lambda, dNTPs)</b> A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP, dGTP, and dTTP and 0.2 µM primers containing 1 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 0.5 kb product.</p>	<b>Pass</b>

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

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