

## New England Biolabs Certificate of Analysis

**Product Name:** Deoxynucleotide (dNTP) Solution Mix  
**Catalog #:** N0447S/L  
**Concentration:** 10 mM each dNTP  
**Unit Definition:** N/A  
**Lot #:** 0971708  
**Assay Date:** 08/2017  
**Expiration Date:** 08/2019  
**Storage Temp:** -20°C  
**Storage Conditions:** Supplied in Ultrapure water as a sodium salt (pH 7.5)  
**Specification Version:** PS-N0447S/L v2.0  
**Effective Date:** 11 Aug 2017

Assay Name/Specification (minimum release criteria)	Lot #0971708
<b>Endonuclease Activity (Nicking)</b> - A 50 µl reaction in NEBuffer 2 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 10 µl of Deoxynucleotide (dNTP) Solution Mix 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>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 containing Lambda-HindIII DNA and a minimum of 10 µl of Deoxynucleotide (dNTP) Solution Mix incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	<b>Pass</b>
<b>PCR Amplification (0.5 kb Lambda, dNTPs)</b> - A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM Deoxynucleotide (dNTP) Solution Mix and 0.5 µM primers containing 1 ng Lambda DNA with 1.25 units of <i>Taq</i> DNA Polymerase for 25 cycles of PCR amplification results in the expected 0.5 kb product.	<b>Pass</b>
<b>PCR Amplification (2.0 kb Lambda, dNTPs)</b> - A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM Deoxynucleotide (dNTP) Solution Mix and 0.5 µM primers containing 1 ng Lambda DNA with 1.25 units of <i>Taq</i> DNA Polymerase for 25 cycles of PCR amplification results in the expected 2.0 kb product.	<b>Pass</b>
<b>PCR Amplification (5.0 kb Lambda, dNTPs)</b> - A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM Deoxynucleotide (dNTP) Solution Mix and 0.5 µM primers containing 1 ng Lambda DNA with 1.25 units of <i>Taq</i> DNA Polymerase for 25 cycles of PCR amplification results in the expected 5.0 kb product.	<b>Pass</b>



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Assay Name/Specification (minimum release criteria)	Lot #0971708
<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 <i>p</i>-Nitrophenyl Phosphate (pNPP) and a minimum of 40 µl Deoxynucleotide (dNTP) Solution Mix 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>Physical Purity (HPLC)</b> - Deoxynucleotide (dNTP) Solution Mix is ≥ 99% pure as determined by HPLC analysis.</p>	<b>Pass</b>
<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 Deoxynucleotide (dNTP) Solution Mix 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>	<b>Pass</b>



Authorized by  
Karen Moreira  
11 Aug 2017



Inspected by  
Tony Spear-Alfonso  
31 Aug 2017

