New England Biolabs  
Certificate of Analysis

Product Name: Deoxynucleotide (dNTP) Solution Mix  
Catalog Number: N0447L  
Concentration: 10 mM  
Unit Definition: N/A  
Lot Number: 10050330  
Expiration Date: 02/2021  
Storage Temperature: -20°C  
Storage Conditions: Supplied in Ultrapure water as a sodium salt (pH 7.5)  
Specification Version: PS-N0447S/L v2.0

<table>
<thead>
<tr>
<th>NEB Part Number</th>
<th>Component Description</th>
<th>Lot Number</th>
<th>Individual QC Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>N0447LVIAL</td>
<td>Deoxynucleotide (dNTP) Solution Mix</td>
<td>10036375</td>
<td>Pass</td>
</tr>
</tbody>
</table>

Assay Name/Specification

Endonuclease Activity (Nicking)  
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.  
Lot # 10050330  
Pass

Non-Specific DNase Activity (16 Hour)  
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.  
Pass

PCR Amplification (0.5 kb Lambda, dNTPs)  
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 Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 0.5 kb product.  
Pass

PCR Amplification (2.0 kb Lambda, dNTPs)  
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 Taq DNA Polymerase for 25 cycles of PCR amplification results in  
Pass
**Assay Name/Specification**

<table>
<thead>
<tr>
<th>Assay Name/Specification</th>
<th>Lot # 10050330</th>
</tr>
</thead>
<tbody>
<tr>
<td>the expected 2.0 kb product.</td>
<td>Pass</td>
</tr>
<tr>
<td><strong>PCR Amplification (5.0 kb Lambda, dNTPs)</strong></td>
<td></td>
</tr>
<tr>
<td>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 Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 5.0 kb product.</td>
<td>Pass</td>
</tr>
<tr>
<td><strong>Phosphatase Activity (pNPP)</strong></td>
<td></td>
</tr>
<tr>
<td>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 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.</td>
<td>Pass</td>
</tr>
<tr>
<td><strong>Physical Purity (HPLC)</strong></td>
<td></td>
</tr>
<tr>
<td>Deoxynucleotide (dNTP) Solution Mix is ≥ 99% pure as determined by HPLC analysis.</td>
<td>Pass</td>
</tr>
<tr>
<td><strong>RNase Activity (Extended Digestion)</strong></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>Pass</td>
</tr>
</tbody>
</table>

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

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Doreen Duquette  
Production Scientist  
21 Feb 2019

Michael Tonello  
Packaging Quality Control Inspector  
29 Jul 2019