NEW ENGLAND BioLabs Inc.
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# 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:* *10107681*
*Expiration Date:* *03/2023*
*Storage Temperature:* *-20°C*
*Storage Conditions:* *Supplied in Ultrapure water as a sodium salt (pH 7.5)*
*Specification Version:* *PS-N0446S v2.0*

| Deoxynucleotide (dNTP) Solution Set Component List | | | |
|---|---|---|---|
| **NEB Part Number** | **Component Description** | **Lot Number** | **Individual QC Result** |
| N0443SVIAL | dTTP | 10105791 | **Pass** |
| N0442SVIAL | dGTP | 10105792 | **Pass** |
| N0441SVIAL | dCTP | 10105788 | **Pass** |
| N0440SVIAL | dATP Solution | 10105793 | **Pass** |

| Assay Name/Specification | Lot # 10107681 |
|---|---|
| **PCR Amplification (2.0 kb Lambda, dNTPs)**<br>A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP, dGTP, and dTTP 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 2.0 kb product. | **Pass** |
| **PCR Amplification (0.5 kb Lambda, dNTPs)**<br>A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP, dGTP, and dTTP 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 (5.0 kb Lambda, dNTPs)**<br>A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP, dGTP, and dTTP 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. | **Pass** |
| **Non-Specific DNase Activity (16 Hour)** | **Pass** |

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| Assay Name/Specification | Lot # 10107681 |
|---|---|
| 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 10 µl of dATP, dCTP, dGTP, and dTTP incubated for 16 hours at 37ºC results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis. | |
| **Endonuclease Activity (Nicking)**<br>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 37ºC results in <10% conversion to the nicked form as determined by agarose gel electrophoresis. | **Pass** |
| **Phosphatase Activity (pNPP)**<br>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 4 µl dATP, dCTP, dGTP, and dTTP incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis. | **Pass** |
| **Physical Purity (HPLC)**<br>dATP, dCTP, dGTP, and dTTP is ≥ 99% pure as determined by HPLC analysis. | **Pass** |
| **RNase Activity (Extended Digestion)**<br>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 37ºC. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection. | **Pass** |

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



Christie Vazquez
Production Scientist
27 May 2021

Michael Tonello
Packaging Quality Control Inspector
27 May 2021