

## 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:** 10085433  
**Expiration Date:** 08/2022  
**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                  | 10079913   | Pass                 |
| N0442SVIAL   | dGTP                  | 10079912   | Pass                 |
| N0441SVIAL   | dCTP                  | 10079909   | Pass                 |
| N0440SVIAL   | dATP Solution         | 10079908   | Pass                 |

| Assay Name/Specification  | Lot # 10085433 |
|---|----------------|
| <b>RNase Activity (Extended Digestion)</b><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 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><br>dATP, dCTP, dGTP, and dTTP is ≥ 99% pure as determined by HPLC analysis.   | Pass           |
| <b>Phosphatase Activity (pNPP)</b><br>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 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           |
| <b>PCR Amplification (5.0 kb Lambda, dNTPs)</b><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                                      | Pass           |

| Assay Name/Specification  | Lot # 10085433 |
|---|----------------|
| <p>product.</p> <p><b>PCR Amplification (2.0 kb Lambda, dNTPs)</b><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.</p>                                     | <b>Pass</b>    |
| <p><b>PCR Amplification (0.5 kb Lambda, dNTPs)</b><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.</p>   | <b>Pass</b>    |
| <p><b>Non-Specific DNase Activity (16 Hour)</b><br/>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 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p> | <b>Pass</b>    |
| <p><b>Endonuclease Activity (Nicking)</b><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 37°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>  | <b>Pass</b>    |

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

One or more products referenced in this document may be covered by a 3rd-party trademark. Please visit [www.neb.com/trademarks](http://www.neb.com/trademarks) for additional information.



Christie Vazquez  
Production Scientist  
19 Oct 2020



Michael Tonello  
Packaging Quality Control Inspector  
19 Oct 2020