

## New England Biolabs Certificate of Analysis

**Product Name:** *dATP Solution*  
**Catalog #:** *N0440S*  
**Concentration:** *100 mM*  
**Unit Definition:** *N/A*  
**Lot #:** *0551609*  
**Assay Date:** *09/2016*  
**Expiration Date:** *9/2018*  
**Storage Temp:** *-20°C*  
**Storage Conditions:** *Supplied in Ultrapure water as a sodium salt (pH 7.5)*  
**Specification Version:** *PS-N0440S v1.0*  
**Effective Date:** *23 Feb 2016*

Assay Name/Specification (minimum release criteria)	Lot #0551609
<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 Solution 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 dATP Solution 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 dATP, dGTP, dCTP, and dTTP 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 dATP, dGTP, dCTP, and dTTP 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 dATP, dGTP, dCTP, and dTTP 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>
<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 4 µl dATP Solution incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	<b>Pass</b>



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Assay Name/Specification (minimum release criteria)	Lot #0551609
<b>Physical Purity (HPLC)</b> - dATP Solution is $\geq$ 99% pure as determined by HPLC analysis.	<b>Pass</b>
<b>RNase Activity (Extended Digestion)</b> - A 10 $\mu$ l reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 $\mu$ l of dATP Solution 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.	<b>Pass</b>



Authorized by  
Melanie Fortier  
23 Feb 2016



Inspected by  
Katie Gebhardt  
30 Aug 2016

