

## New England Biolabs Certificate of Analysis

**Product Name:** dATP Solution  
**Catalog Number:** N0440S  
**Concentration:** 100 mM  
**Unit Definition:** N/A  
**Packaging Lot Number:** 10140942  
**Expiration Date:** 12/2023  
**Storage Temperature:** -20°C  
**Storage Conditions:** Supplied in Ultrapure water as a sodium salt (pH 7.5)  
**Specification Version:** PS-N0440S v3.0

dATP Solution Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
N0440SVIAL	dATP Solution	10132187	Pass

Assay Name/Specification	Lot # 10140942
<b>Non-Specific DNase Activity (16 Hour)</b> 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 4 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.	Pass
<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.	Pass
<b>Physical Purity (HPLC)</b> dATP Solution is ≥ 99% pure as determined by HPLC analysis.	Pass
<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 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.	Pass
<b>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 1 µl of dATP Solution is screened for the presence of E. coli genomic	Pass

Assay Name/Specification	Lot # 10140942
<p>DNA using SYBR® Green qPCR with primers specific for the E. coli 16S rRNA locus. Results are quantified using a standard curve generated from purified E. coli genomic DNA. The measured level of E. coli genomic DNA contamination is <math>\leq 1</math> E. coli genome.</p>	
<p><b>PCR Amplification (2.0 kb Lambda, dNTPs)</b> A 50 <math>\mu</math>l reaction in ThermoPol® Reaction Buffer in the presence of 200 <math>\mu</math>M dATP, dGTP, dCTP, and dTTP and 0.2 <math>\mu</math>M 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> A 50 <math>\mu</math>l reaction in ThermoPol® Reaction Buffer in the presence of 200 <math>\mu</math>M dATP, dGTP, dCTP, and dTTP and 0.2 <math>\mu</math>M 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>PCR Amplification (5.0 kb Lambda, dNTPs)</b> A 50 <math>\mu</math>l reaction in ThermoPol® Reaction Buffer in the presence of 200 <math>\mu</math>M dATP, dGTP, dCTP, and dTTP and 0.2 <math>\mu</math>M 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.</p>	<b>Pass</b>
<p><b>Phosphatase Activity (pNPP)</b> A 200 <math>\mu</math>l 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 16 <math>\mu</math>l of dATP Solution 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>

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

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28 Feb 2022

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