

## New England Biolabs Certificate of Analysis

**Product Name:** dUTP Solution  
**Catalog Number:** N0459S  
**Concentration:** 100 mM  
**Packaging Lot Number:** 10180529  
**Expiration Date:** 02/2025  
**Storage Temperature:** -20°C  
**Storage Conditions:** Supplied in Ultrapure water as a sodium salt (pH 7.5)  
**Specification Version:** PS-N0459S v2.0

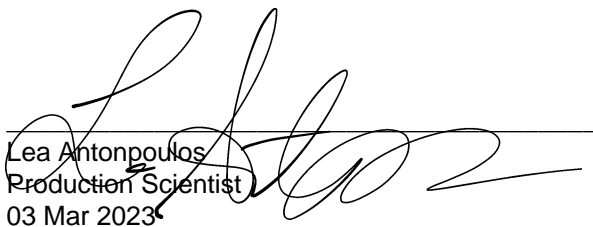
| dUTP Solution Component List |                       |            |                      |
|------------------------------|-----------------------|------------|----------------------|
| NEB Part Number              | Component Description | Lot Number | Individual QC Result |
| N0459SVIAL                   | dUTP Solution         | 10180528   | Pass                 |

| Assay Name/Specification  | Lot # 10180529 |
|---|----------------|
| <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 dUTP Solution incubated for 4 hours at 37°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>   | Pass           |
| <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 4 µl of dUTP Solution incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p> | Pass           |
| <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, dGTP, dCTP, and dUTP and 0.2 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>                                       | Pass           |
| <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, dGTP, dCTP, and dUTP and 0.2 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>                                       | Pass           |

| Assay Name/Specification   | Lot # 10180529 |
|--|----------------|
| <p><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 16 µl of dUTP 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>    |
| <p><b>Physical Purity (HPLC)</b><br/>dUTP Solution is ≥ 99% pure as determined by HPLC analysis.</p>   | <b>Pass</b>    |
| <p><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 of dUTP Solution 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.</p>  | <b>Pass</b>    |
| <p><b>qPCR DNA Contamination (E. coli Genomic)</b><br/>A minimum of 1 µl of dUTP Solution is screened for the presence of E. coli genomic 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 ≤ 1 E. coli genome.</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.

  
Lea Antonopoulos  
Production Scientist  
03 Mar 2023

  
Michael Tonello  
Packaging Quality Control Inspector  
22 Mar 2023