

## New England Biolabs Product Specification

<i>Product Name:</i>	7-deaza-dGTP
<i>Catalog #:</i>	N0445S/L
<i>Concentration:</i>	5 mM
<i>Unit Definition:</i>	N/A
<i>Shelf Life:</i>	24 months
<i>Storage Temp:</i>	-20°C
<i>Storage Conditions:</i>	Supplied in Ultrapure water as a lithium salt, (pH 7.0)
<i>Specification Version:</i>	PS-N0445S/L v1.0
<i>Effective Date:</i>	13 Aug 2015

### Assay Name/Specification (minimum release criteria)

**Endonuclease Activity (Nicking)** - A 50 µl reaction in NEBuffer 2 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 µl of 7-deaza-dGTP incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.

**Non-Specific DNase Activity (16 Hour)** - 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 5 µl of 7-deaza-dGTP incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.

**PCR Amplification (0.5 kb Lambda DNA, 7-deaza)** - A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP, dTTP and 7-deaza-dGTP, 0.5 µM primers containing 1 ng Lambda DNA with 5 units of *Taq*® DNA Polymerase for 25 cycles of PCR amplification results in the expected 0.5 kb product.

**PCR Amplification (2 kb Lambda DNA, 7-deaza)** - A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP, dTTP and 7-deaza-dGTP, 0.5 µM primers containing 1 ng Lambda DNA with 5 units of *Taq*® DNA Polymerase for 25 cycles of PCR amplification results in the expected 2 kb product.

**PCR Amplification (5 kb Lambda DNA, 7-deaza)** - A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP, dTTP and 7-deaza-dGTP, 0.5 µM primers containing 1 ng Lambda DNA with 5 units of *Taq*® DNA Polymerase for 25 cycles of PCR amplification results in the expected 5 kb product.

**Phosphatase Activity (pNPP)** - A 200 µl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl<sub>2</sub> containing 2.5 mM *p*-Nitrophenol Phosphate (pNPP) and a minimum of 80 µl 7-deaza-dGTP incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.

**Physical Purity (HPLC)** - 7-deaza-dGTP is ≥ 95% pure as determined by HPLC analysis.

**RNase Activity (Extended Digestion)** - A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of 7-deaza-dGTP 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.

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Date 13 Aug 2015

