New England Biolabs  
Product Specification

Product Name: T7 DNA Polymerase (unmodified)  
Catalog #: M0274S/L  
Concentration: 10,000 units/ml  
Unit Definition: One unit is defined as the amount of enzyme that will incorporate 10 nmoles of dNTP into acid insoluble material in 30 minutes at 37°C.  
Shelf Life: 24 months  
Storage Temp: -20°C  
Storage Conditions: 50 mM KPO4, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, (pH 7.0 @ 25°C)  
Specification Version: PS-M0274S/L v1.0  
Effective Date: 05 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 100 units of T7 DNA Polymerase (unmodified) incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.

Phosphatase Activity (pNPP) - A 200 µl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl₂ containing 2.5 mM p-Nitrophenol Phosphate (pNPP) and a minimum of 100 units T7 DNA Polymerase (unmodified) incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.

Protein Purity Assay (SDS-PAGE) - T7 DNA Polymerase (unmodified) is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.

qPCR DNA Contamination (E. coli Genomic) - A minimum of 10 units of T7 DNA Polymerase (unmodified) 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.

Derek Robinson  
Director of Quality Control  

Date 05 Aug 2015