Product Name: Taq DNA Polymerase with Standard Taq Buffer
Catalog Number: M0273S
Concentration: 5,000 U/ml
Unit Definition: One unit is defined as the amount of enzyme that will incorporate 15 nmol of dNTP into acid insoluble material in 30 minutes at 75°C.

Packaging Lot Number: 10063523
Expiration Date: 08/2021
Storage Temperature: -20°C
Storage Conditions: 10 mM Tris-HCl, 100 mM KCl, 1 mM DTT, 0.1 mM EDTA, 0.5% Tween® 20, 0.5% IGEPAL® CA-630, 50% Glycerol, (pH 7.4 @ 25°C)
Specification Version: PS-M0273S/L/X/E v1.0

<table>
<thead>
<tr>
<th>NEB Part Number</th>
<th>Component Description</th>
<th>Lot Number</th>
<th>Individual QC Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>M0273SVIAL</td>
<td>Taq DNA Polymerase with Standard Taq Buffer</td>
<td>10049740</td>
<td>Pass</td>
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<tr>
<td>B9014SVIAL</td>
<td>Standard Taq Reaction Buffer Pack</td>
<td>10049383</td>
<td>Pass</td>
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</tbody>
</table>

**Assay Name/Specification**

**PCR Amplification (5.0 kb Lambda DNA)**
A 50 µl reaction in Standard Taq Reaction Buffer in the presence of 200 µM dNTPs and 0.2 µM primers containing 5 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.

**Protein Purity Assay (SDS-PAGE)**
Taq DNA Polymerase is ≥ 99% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.

**qPCR DNA Contamination (E. coli Genomic)**
A minimum of 5 units of Taq DNA Polymerase 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.

**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 Taq DNA Polymerase is incubated at 37°C. After incubation
<table>
<thead>
<tr>
<th>Assay Name/Specification</th>
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</tr>
</thead>
<tbody>
<tr>
<td>for 16 hours, &gt;90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</td>
<td></td>
</tr>
<tr>
<td><strong>Single Stranded DNase Activity (FAM-Labeled Oligo)</strong></td>
<td>Pass</td>
</tr>
<tr>
<td>A 50 µl reaction in ThermoPol® Reaction Buffer containing a 10 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 25 units of Taq DNA Polymerase incubated for 30 minutes at 37°C and 75°C yields &lt;10% degradation as determined by capillary electrophoresis.</td>
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<tr>
<td><strong>Non-Specific DNase Activity (16 Hour)</strong></td>
<td>Pass</td>
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<tr>
<td>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 units of Taq DNA Polymerase incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</td>
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<tr>
<td><strong>Phosphatase Activity (pNPP)</strong></td>
<td>Pass</td>
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<tr>
<td>A 200 µl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl₂ containing 2.5 mM p-Nitrophenyl Phosphate (pNPP) and a minimum of 100 units Taq DNA Polymerase incubated for 4 hours at 37°C yields &lt;0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</td>
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<tr>
<td><strong>Endonuclease Activity (Nicking)</strong></td>
<td>Pass</td>
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<tr>
<td>A 50 µl reaction in ThermoPol® Reaction Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 units of Taq DNA Polymerase incubated for 4 hours at 37°C and 75°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</td>
<td></td>
</tr>
</tbody>
</table>

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

Christie Vazquez  
Production Scientist  
28 Aug 2019

Michael Tonello  
Packaging Quality Control Inspector  
28 Jan 2020