New England Biolabs
Product Specification

Product Name: OneTaq® Standard Reaction Buffer Pack
Catalog #: B9022S
Concentration: 5X Concentrate
Shelf Life: 36 months
Storage Temp: -20°C
Composition (1X): 20 mM Tris-HCl, 22 mM KCl, 22 mM NH₄Cl, 1.8 mM MgCl₂, 0.06 % IGEPAL® CA-630, 0.05 % Tween® 20, (pH 8.9 @ 25°C)

Specification Version: PS-B9022S v1.0
Effective Date: 10 Aug 2016

Assay Name/Specification (minimum release criteria)

Endonuclease Activity (Nicking, Buffer) - A 50 µl reaction in 2X OneTaq® Standard Reaction Buffer containing 1 µg of supercoiled PhiX174 DNA 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, Buffer) - A 50 µl reaction in 2X OneTaq® Standard Reaction Buffer containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA 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 (5 kb Lambda DNA, Buffer) - A 25 µl reaction in OneTaq® Standard Reaction Buffer in the presence of 200 µM dNTPs and 0.2 µM primers containing 5 ng Lambda DNA with 0.625 units of OneTaq® DNA Polymerase for 25 cycles of PCR amplification results in the expected 5 kb product.

pH (buffers/solutions) - The pH of 5X OneTaq® Standard Reaction Buffer is between pH 8.8 and 9.0 at 25°C.

Phosphatase Activity (pNPP, Buffer) - A 200 µl reaction in 1M Diethanolamine @ pH 9.8 and 0.5 mM MgCl₂ containing 2.5 mM p-Nitrophenyl Phosphate (pNPP) and a minimum of 80 µl OneTaq® Standard Reaction Buffer incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.

qPCR DNA Contamination (E. coli Genomic, Buffer) - A minimum of 1 µl of OneTaq® Standard Reaction Buffer 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.
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<thead>
<tr>
<th>Assay Name/Specification (minimum release criteria)</th>
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<tr>
<td><strong>RNase Activity (Extended Digestion)</strong> - A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of OneTaq® Standard Reaction Buffer is incubated at 37ºC. After incubation for 4 hours, &gt;90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</td>
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Derek Robinson  
Director of Quality Control  
Date 10 Aug 2016