

New England Biolabs Certificate of Analysis

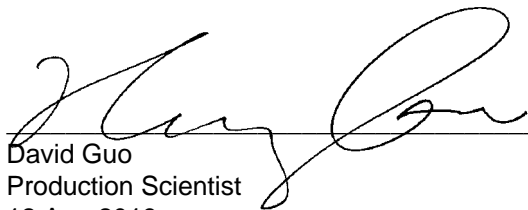
Product Name: Q5® Reaction Buffer Pack
 Catalog Number: B9027S
 Concentration: 5 X Concentrate
 Packaging Lot Number: 10059099
 Expiration Date: 08/2022
 Storage Temperature: -20°C
 Specification Version: PS-B9027S v1.0
 Composition (1X): Proprietary

Q5® Reaction Buffer Pack Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
B9028AVIAL	Q5® High GC Enhancer	10048760	Pass
B9027SVIAL	Q5® Reaction Buffer Pack	10051922	Pass

Assay Name/Specification	Lot # 10059099
<p>PCR Amplification (7 kb Human Genomic DNA, Buffer) A 50 µl reaction in Q5® Reaction Buffer in the presence of 200 µM dNTPs and 0.5 µM primers containing 20 ng Human Genomic DNA with 1 unit of Q5® High-Fidelity DNA Polymerase for 30 cycles of PCR amplification results in the expected 7 kb product.</p>	Pass
<p>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 Q5® Reaction Buffer incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	Pass
<p>qPCR DNA Contamination (E. coli Genomic, Buffer) A minimum of 1 µl of Q5® 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.</p>	Pass
<p>RNase Activity Assay (4 Hour 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 Q5® Reaction Buffer is incubated at 37°C. After incubation for 4 hours, >90% of the substrate RNA remains intact as determined by gel</p>	Pass

Assay Name/Specification	Lot # 10059099
electrophoresis using fluorescent detection.	
<p>PCR Amplification (20 kb Lambda DNA, Buffer) A 50 µl reaction in Q5[®] Reaction Buffer in the presence of 200 µM dNTPs and 1 µM primers containing 10 ng Lambda DNA with 1 unit of Q5[®] High-Fidelity DNA Polymerase for 22 cycles of PCR amplification results in the expected 20 kb product.</p>	Pass
<p>Endonuclease Activity (Nicking, Buffer) A 50 µl reaction in 2X Q5[®] 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.</p>	Pass
<p>Non-Specific DNase Activity (16 hour, Buffer) A 50 µl reaction in 2X Q5[®] 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.</p>	Pass

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



David Guo
Production Scientist
12 Aug 2019



Michael Tonello
Packaging Quality Control Inspector
30 Oct 2019