240 County Road Ipswich, MA 01938-2723 Tel 978-927-5054 Fax 978-921-1350 www.neb.com info@neb.com

## New England Biolabs Certificate of Analysis

Product Name: Hemo KlenTaq® Reaction Buffer Pack

-20°C

 Catalog #:
 B0332S

 Concentration:
 5X Concentrate

 Lot #:
 0031801

 Assay Date:
 01/2018

 Expiration Date:
 01/2021

Storage Temp:

Composition (1X): 60 mM Tricine, 5 mM (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 3.5 mM MgCl<sub>2</sub>, 6 % Glycerol, (pH 8.7 @ 25°C)

Specification Version: PS-B0332S v1.0 Effective Date: 08 Jan 2018

Assay Name/Specification (minimum release criteria)	Lot #0031801
<b>Endonuclease Activity (Nicking, Buffer)</b> - A 50 μl reaction in 2X Hemo KlenTaq® 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.	Pass
Non-Specific DNase Activity (16 hour, Buffer) - A 50 µl reaction in 2X Hemo KlenTaq® 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.	Pass
PCR Amplification (0.5 kb Whole Blood DNA, Buffer) - A 50 $\mu$ l reaction in the presence of 200 $\mu$ M dNTPs and 0.3 $\mu$ M primers containing 10% whole blood treated with sodium heparin, sodium EDTA, potassium EDTA or sodium citrate with 4 $\mu$ l Hemo KlenTaq® and 1X Hemo KlenTaq® Reaction Buffer for 35 cycles of PCR amplification results in the expected 0.5 kb product.	Pass
pH (buffers/solutions) - The pH of 5X Hemo KlenTaq® Reaction Buffer is between pH 8.6 and 8.8 at 25°C.	Pass
Phosphatase Activity (pNPP, Buffer) - A 200 µl reaction in 1M Diethanolamine @ pH 9.8 and 0.5 mM MgCl <sub>2</sub> containing 2.5 mM <i>p</i> -Nitrophenyl Phosphate (pNPP) and a minimum of 80 µl Hemo KlenTaq® Reaction Buffer incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	Pass









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Assay Name/Specification (minimum release criteria)	Lot #0031801
<b>qPCR DNA Contamination</b> ( <i>E. coli</i> Genomic, Buffer) - A minimum of 1 $\mu$ l of Hemo KlenTaq® Reaction Buffer is screened for the presence of <i>E. coli</i> genomic DNA using SYBR® Green qPCR with primers specific for the <i>E. coli</i> 16S rRNA locus. Results are quantified using a standard curve generated from purified <i>E. coli</i> genomic DNA. The measured level of <i>E. coli</i> genomic DNA contamination is $\leq 1$ <i>E. coli</i> genome.	Pass
RNase Activity (Extended Digestion) - A 10 $\mu$ l reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 $\mu$ l of Hemo KlenTaq® Reaction Buffer is incubated at 37°C. After incubation for 4 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	Pass

Authorized by Lynne Apone 08 Jan 2018







Inspected by
Tony Spear-Alfonso

17 Jan 2018