NEW ENGLAND BioLabs Inc.
be INSPIRED drive DISCOVERY stay GENUINE
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: *Standard Taq (Mg-free) Reaction Buffer Pack*
Catalog Number: *B9015S*
Concentration: *10 X Concentrate*
Lot Number: *10030139*
Expiration Date: *03/2022*
Storage Temperature: *-20°C*
Specification Version: *PS-B9015S v1.0*
Composition (1X): *10 mM Tris-HCl, 50 mM KCl, (pH 8.3 @ 25°C)*

Standard Taq (Mg-free) Reaction Buffer Pack Component List			
NEB Part Number	**Component Description**	**Lot Number**	**Individual QC Result**
B9021SVIAL	Magnesium Chloride ($MgCl_2$) Solution	10020022	**Pass**
B9015SVIAL	Standard Taq (Mg-free) Reaction Buffer Pack	0021703	**Pass**

Assay Name/Specification	**Lot # 10030139**
Endonuclease Activity (Nicking, Mg-Free Buffer) A 50 µl reaction in 2X Standard Taq (Mg-free) Reaction Buffer and 3 mM MgCl2 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, Mg-Free Buffer) A 50 µl reaction in 2X Standard Taq (Mg-free) Reaction Buffer and 3 mM MgCl2 containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA incubated for 16 hours at 37ºC results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**Pass**
PCR Amplification (5 kb Lambda DNA, Mg-Free Buffer) A 50 µl reaction in Standard Taq (Mg-free) Reaction Buffer and 1.5 mM MgCl2 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 kb product.	**Pass**
pH (buffers/solutions) The pH of 10X Standard Taq (Mg-free) Reaction Buffer is between pH 8.2 and 8.4 at 25°C.	**Pass**
Phosphatase Activity (pNPP, Buffer)	**Pass**

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Assay Name/Specification	Lot # 10030139
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 40 µl Standard Taq (Mg-free) 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 Standard Taq (Mg-free) 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.	**Pass**
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 Standard Taq (Mg-free) Reaction Buffer is incubated at 37ºC. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	**Pass**

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

Tony Spear-Alfonso
Production Scientist
28 Aug 2018

Michael Tonello
Packaging Quality Control Inspector
19 Nov 2018