

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:	HiFi Taq DNA Ligase
Catalog #:	M0647S
Concentration:	1 reaction/µl
Unit Definition:	N/A
<i>Lot</i> #:	0031801
Assay Date:	01/2018
Expiration Date:	01/2020
Storage Temp:	-20°C
Storage Conditions:	10 mM Tris-HCl , 100 mM KCl , 1 mM DTT , 0.1 mM EDTA , 0.1 % Triton®X-100 , 50 % Glycerol, (pH 7.4 @ 25° C)
Specification Version:	PS-M0647S v3.0
Effective Date:	17 Jan 2018

Assay Name/Specification (minimum release criteria)	Lot #0031801
Endonuclease Activity (Nicking) - A 50 μ l reaction in NEBuffer 4 containing 1 μ g of supercoiled PhiX174 DNA and a minimum of 10 μ l of HiFi <i>Taq</i> DNA Ligase incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
Exonuclease Activity (Radioactivity Release) - A 50 μ l reaction in HiFi <i>Taq</i> DNA Ligase Buffer containing 1 μ g of a mixture of single and double-stranded [³ H] <i>E. coli</i> DNA and a minimum of 10 μ l of HiFi <i>Taq</i> DNA Ligase incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	Pass
Functional Testing (HiFi <i>Taq</i> DNA Ligase, Activity) - A 20 μ l reaction in HiFi <i>Taq</i> DNA Ligase Buffer containing 0.1 μ M of a FAM-labeled nicked dsDNA substrate and 44 pM HiFi <i>Taq</i> DNA Ligase incubated for 10 minutes at 65°C results in 40%+/-20 ligation of the substrate as determined by capillary electrophoresis.	Pass
Functional Testing (HiFi <i>Taq</i> DNA Ligase, Fidelity) - A 20 μ l reaction in HiFi <i>Taq</i> DNA Ligase Buffer containing 0.1 μ M of an equimolar mix of a FAM-labeled nicked dsDNA substrate and 44 pM HiFi <i>Taq</i> DNA Ligase incubated for 10 minutes at 65°C results in complete ligation of the matched product and <40% ligation of the mismatched products as determined by capillary electrophoresis.	Pass
Non-Specific DNase Activity (16 Hour) - A 50 μ l reaction in NEBuffer 4 containing 1 μ g of Lambda-HindIII DNA and a minimum of 2 μ l of HiFi <i>Taq</i> DNA Ligase incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	Pass



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Assay Name/Specification (minimum release criteria)	Lot #0031801
qPCR DNA Contamination (<i>E. coli</i> Genomic) - A minimum of 1 μ l of HiFi <i>Taq</i> DNA Ligase 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 ≤ 1 <i>E. coli</i> genome.	Pass
RNase Activity (Extended Digestion) - A 10 μ l reaction in NEBuffer 4 containing 40 ng of a 300 base single- stranded RNA and a minimum of 1 μ l of HiFi <i>Taq</i> DNA Ligase 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

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Authorized by Derek Robinson 17 Jan 2018



May Klorengen Inspected by

Inspected by Mary Lorenzen 24 Jan 2018