

## New England Biolabs Product Specification

<b>Product Name:</b>	<i>Salt-T4<sup>®</sup> DNA Ligase</i>
<b>Catalog #:</b>	<i>M0467S/L</i>
<b>Concentration:</b>	<i>400,000 units/ml</i>
<b>Unit Definition:</b>	<i>One unit is defined as the amount of enzyme required to give 50% ligation of 6 µg of Lambda-HindIII DNA in 30 minutes at 25°C in a total reaction volume of 20 µl in 1X T4 DNA Ligase Reaction Buffer supplemented with 100 mM NaCl.</i>
<b>Shelf Life:</b>	<i>24 months</i>
<b>Storage Temp:</b>	<i>-20°C</i>
<b>Storage Conditions:</b>	<i>10 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50 % Glycerol, (pH 7.4 @ 25°C)</i>
<b>Specification Version:</b>	<i>PS-M0467S/L v2.0</i>
<b>Effective Date:</b>	<i>17 Apr 2023</i>

### Assay Name/Specification (minimum release criteria)

**DNase Activity (Labeled Oligo, 3' extension)** - A 50 µl reaction in CutSmart<sup>®</sup> Buffer containing a 20 nM solution of a fluorescent labeled double-stranded oligonucleotide containing a 3' extension and a minimum of 2000 units of Salt-T4<sup>®</sup> DNA Ligase incubated for 16 hours at 37°C yields <5% degradation as determined by capillary electrophoresis.

**DNase Activity (Labeled Oligo, 5' extension)** - A 50 µl reaction in CutSmart<sup>®</sup> Buffer containing a 20 nM solution of a fluorescent labeled double-stranded oligonucleotide containing a 5' extension and a minimum of 2000 units of Salt-T4<sup>®</sup> DNA Ligase incubated for 16 hours at 37°C yields <5% degradation as determined by capillary electrophoresis.

**Double Stranded DNase Activity (Labeled Oligo)** - A 50 µl reaction in CutSmart<sup>®</sup> Buffer containing a 20 nM solution of a fluorescent labeled double-stranded oligonucleotide containing a blunt end and a minimum of 2000 units of Salt-T4<sup>®</sup> DNA Ligase incubated for 16 hours at 37°C yields <5% degradation as determined by capillary electrophoresis.

**Endonuclease Activity (Nicking)** - A 50 µl reaction in NEBuffer 1 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 400 units of Salt-T4<sup>®</sup> DNA Ligase 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)** - A 50 µl reaction in NEBuffer 1 containing 1 µg of CIP-treated Lambda-HindIII DNA and a minimum of 400 units of Salt-T4<sup>®</sup> 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.

**Protein Purity Assay (SDS-PAGE)** - Salt-T4<sup>®</sup> DNA Ligase is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.



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**qPCR DNA Contamination (*E. coli* Genomic)** - A minimum of 400 units of Salt-T4<sup>®</sup> DNA Ligase is screened for the presence of *E. coli* genomic DNA using SYBR<sup>®</sup> 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  $\leq 1$  *E. coli* genome.

**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 Salt-T4<sup>®</sup> DNA Ligase is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.

**Single Stranded DNase Activity (FAM-Labeled Oligo)** - A 50  $\mu$ l reaction in CutSmart<sup>®</sup> Buffer containing a 20 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 2000 units of Salt-T4<sup>®</sup> DNA Ligase incubated for 16 hours at 37°C yields <5% degradation as determined by capillary electrophoresis.

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Date 17 Apr 2023

Nancy Considine  
Quality Approver

