**New England Biolabs**  
**Product Specification**

<table>
<thead>
<tr>
<th><strong>Product Name:</strong></th>
<th>Taq DNA Ligase</th>
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</thead>
<tbody>
<tr>
<td><strong>Catalog #:</strong></td>
<td>M0208S/L</td>
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<tr>
<td><strong>Concentration:</strong></td>
<td>40,000 units/ml</td>
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<tr>
<td><strong>Unit Definition:</strong></td>
<td>One unit is defined as the amount of enzyme required to give 50% ligation of the 12-base pair cohesive ends of 1 µg of BstEII-digested Lambda DNA in a total reaction volume of 50 µl in 15 minutes at 45°C.</td>
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<tr>
<td><strong>Shelf Life:</strong></td>
<td>24 months</td>
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<td><strong>Storage Temp:</strong></td>
<td>-20°C</td>
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<tr>
<td><strong>Storage Conditions:</strong></td>
<td>10 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 200 µg/ml BSA, 50% Glycerol, (pH 7.4 @ 25°C)</td>
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<tr>
<td><strong>Specification Version:</strong></td>
<td>PS-M0208S/L v2.0</td>
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<tr>
<td><strong>Effective Date:</strong></td>
<td>23 Nov 2016</td>
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**Assay Name/Specification** (minimum release criteria)

| **Endonuclease Activity (Nicking)** - A 50 µl reaction in NEBuffer 4 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 400 units of Taq DNA Ligase incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis. |
| **Exonuclease Activity (Radioactivity Release)** - A 50 µl reaction in Taq DNA Ligase Reaction Buffer containing 1 µg of a mixture of single and double-stranded[^3]H E. coli DNA and a minimum of 400 units of Taq DNA Ligase incubated for 4 hours at 37°C releases <0.1% of the total radioactivity. |
| **Non-Specific DNase Activity (16 Hour)** - A 50 µl reaction in NEBuffer 4 containing 1 µg of Lambda-HindIII DNA and a minimum of 80 units of Taq 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)** - Taq DNA Ligase is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection. |
| **qPCR DNA Contamination (E. coli Genomic)** - A minimum of 40 units of Taq DNA Ligase 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. |
| **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 Taq 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. |
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* The BSA in this product has been granted an EDQM "Certificate of Suitability" from the European Directorate for the Quality of Medicines (HE R1-CEP-2003-204-Rev00) and has been granted a USDA Certificate for Export of Bovine Blood Plasma/Serum for Manufacture into Pharmaceutical Products.

Derek Robinson
Director of Quality Control

Date 23 Nov 2016