# New England Biolabs

## Product Specification

### Product Name:
OneTaq® Hot Start 2X Master Mix with GC Buffer

### Catalog #:
M0485S/L

### Concentration:
2X Concentrate

### Shelf Life:
24 months

### Storage Temp:
-20°C

### Composition (1X):
- 80 mM Tris-So₄ (pH 9.2 @ 25°C)
- 20 mM (NH₄)₂SO₄
- 2 mM MgSO₄
- 0.2 mM dATP
- 0.2 mM dCTP
- 0.2 mM dGTP
- 0.2 mM dTTP
- 5% Glycerol
- 5% DMSO
- 0.06% IGEPAL® CA-630
- 0.05% Tween® 20
- 25 units/ml OneTaq® Hot Start DNA Polymerase

### Specification Version:
PS-M0485S/L v2.0

### Effective Date:
12 Feb 2020

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

<table>
<thead>
<tr>
<th>Assay Name/Specification (minimum release criteria)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inhibition of Primer Extension (Hot Start, Radioactivity Incorporation)</strong> - A 50 µl primer extension assay in ThermoPol® Reaction Buffer in the presence of 200 µM dNTPs including [³²H]-dTTP, containing 15 nM primed single-stranded M13mp18 with 2.5 units of OneTaq® Hot Start DNA Polymerase incubated for 16 hours at 25°C yields &gt;95% inhibition when compared to a non-hot start control reaction.</td>
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<td><strong>Non-Specific DNase Activity (16 hour, Buffer)</strong> - A 50 µl reaction in 1X OneTaq® Hot Start Master Mix with GC Buffer containing 1 µg of T3 or T7 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.</td>
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<tr>
<td><strong>PCR Amplification (Buffer Dependent, &gt;65% GC-rich, Master Mix)</strong> - A 25 µl reaction in 1X OneTaq® Hot Start Master Mix with GC Buffer and 0.2 µM primers containing 10 ng Human Genomic DNA for 30 cycles of PCR amplification results in the buffer-dependent production of the 737 bp product.</td>
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<tr>
<td><strong>PCR Amplification (Enhancer Dependent, &gt;70% GC-rich, Master Mix)</strong> - A 25 µl reaction in 1X OneTaq® Hot Start Master Mix with GC Buffer and 20% OneTaq® High GC Enhancer in the presence of 0.2 µM primers containing 10 ng Human Genomic DNA for 30 cycles of PCR amplification results in the enhancer-dependent production of the 627 bp product.</td>
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<tr>
<td><strong>PCR Amplification (Hot Start 2 kb Lambda DNA)</strong> - A 25 µl reaction in OneTaq® Standard Reaction Buffer in the presence of 200 µM dNTPs and 0.2 µM primers containing 10 pg Lambda DNA and 50 ng Human Genomic DNA with 0.625 units of OneTaq® Hot Start DNA Polymerase for 30 cycles of PCR amplification results in an increase in yield of the 2 kb Lambda product and a decrease in non-specific genomic bands when compared to a non-hot start control reaction.</td>
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</tbody>
</table>
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Assay Name/Specification (minimum release criteria)

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 OneTaq® Hot Start 2X Master Mix with GC 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.

One or more products referenced in this document may be covered by a 3rd-party trademark.
Please visit www.neb.com/trademarks for additional information.

Derek Robinson
Director, Quality Control

Date 12 Feb 2020

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