

## New England Biolabs Product Specification

<i>Product Name:</i>	<i>Apyrase</i>
<i>Catalog #:</i>	<i>M0398S/L</i>
<i>Concentration:</i>	<i>500 units/ml</i>
<i>Unit Definition:</i>	<i>One unit is defined as the amount of enzyme that catalyses the release of 1 <math>\mu</math>mol of inorganic phosphate from ATP in 1 minute at 30°C in a total reaction of 50 <math>\mu</math>l.</i>
<i>Shelf Life:</i>	<i>18 months</i>
<i>Storage Temp:</i>	<i>-20°C</i>
<i>Storage Conditions:</i>	<i>20 mM MES, 50 mM NaCl, 1 mM DTT, 0.1 mM CaCl<sub>2</sub>, 0.1 % Tween® 20, 50 % Glycerol, (pH 6.5 @ 25°C)</i>
<i>Specification Version:</i>	<i>PS-M0398S/L v1.0</i>
<i>Effective Date:</i>	<i>05 Oct 2016</i>

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

**Endonuclease Activity (Nicking)** - A 50  $\mu$ l reaction in Apyrase Reaction Buffer containing 1  $\mu$ g of supercoiled PhiX174 DNA and a minimum of 5 units of Apyrase incubated for 4 hours at 30°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.

**Exonuclease Activity (Radioactivity Release)** - A 50  $\mu$ l reaction in Apyrase Reaction Buffer containing 1  $\mu$ g of a mixture of single and double-stranded [<sup>3</sup>H] *E. coli* DNA and a minimum of 5 units of Apyrase incubated for 4 hours at 30°C releases <0.1% of the total radioactivity.

**Non-Specific DNase Activity (16 Hour)** - A 50  $\mu$ l reaction in NEBuffer 4 containing 1  $\mu$ g of PhiX174-HaeIII DNA and a minimum of 5 units of Apyrase incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.

**Phosphatase Activity (pNPP)** - A 200  $\mu$ l reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl<sub>2</sub> containing 2.5 *p*-Nitrophenyl Phosphate (pNPP) and a minimum of 5 units of Apyrase incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.

**Protein Purity Assay (SDS-PAGE)** - Apyrase is  $\geq$  95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.

**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 Apyrase 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.



Date 05 Oct 2016

Derek Robinson  
Director of Quality Control

