

## New England Biolabs Certificate of Analysis

*Product Name:* Pyrophosphatase, Inorganic (yeast)  
*Catalog #:* M2403S/L  
*Concentration:* 100 units/ml  
*Unit Definition:* One unit is the amount of enzyme that will generate 1  $\mu\text{mol}$  of phosphate per minute from inorganic pyrophosphate under standard reaction conditions.  
*Lot #:* 0041712  
*Assay Date:* 12/2017  
*Expiration Date:* 12/2019  
*Storage Temp:* -20°C  
*Storage Conditions:* 100 mM KCl, 20 mM Tris-HCl (pH 8.0), 1 mM DTT, 0.1 mM EDTA, 50 % Glycerol  
*Specification Version:* PS-M2403S/L v1.0  
*Effective Date:* 27 Feb 2017

Assay Name/Specification (minimum release criteria)	Lot #0041712
<b>dNTPase Activity</b> - A 0.5 ml reaction in ThermoPol Reaction Buffer in the presence of 200 $\mu\text{M}$ each dNTPs and a minimum of 1 unit Pyrophosphatase, Inorganic (yeast) incubated for 1 hour at 37°C results in <0.05 $\mu\text{M}$ of inorganic phosphate from dNTPs as determined by the AAM assay.	<b>Pass</b>
<b>Endonuclease Activity (Nicking)</b> - A 50 $\mu\text{l}$ reaction in NEBuffer 4 containing 1 $\mu\text{g}$ of supercoiled PhiX174 DNA and a minimum of 1 unit of Pyrophosphatase, Inorganic (yeast) incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	<b>Pass</b>
<b>Exonuclease Activity (Radioactivity Release)</b> - A 50 $\mu\text{l}$ reaction in NEBuffer 4 containing 1 $\mu\text{g}$ of a mixture of single and double-stranded [ $^3\text{H}$ ] <i>E. coli</i> DNA and a minimum of 1 unit of Pyrophosphatase, Inorganic (yeast) incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	<b>Pass</b>
<b>Non-Specific DNase Activity (16 Hour)</b> - A 50 $\mu\text{l}$ reaction in NEBuffer 4 containing 1 $\mu\text{g}$ of Lambda DNA and a minimum of 1 unit of Pyrophosphatase, Inorganic (yeast) incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	<b>Pass</b>
<b>Phosphatase Activity (pNPP)</b> - A 100 $\mu\text{l}$ reaction in NEBuffer 3 containing 10 mM <i>p</i> -Nitrophenyl Phosphate (pNPP) and a minimum of 1 unit Pyrophosphatase, Inorganic (yeast) incubated for 1 hour at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	<b>Pass</b>

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Assay Name/Specification (minimum release criteria)	Lot #0041712
<b>RNase Activity (Extended Digestion)</b> - A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 0.1 unit of Pyrophosphatase, Inorganic (yeast) 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.	<b>Pass</b>



Authorized by  
Derek Robinson  
27 Feb 2017



Inspected by  
Timothy Meixsell  
11 Dec 2017

