

## New England Biolabs Product Specification

<b>Product Name:</b>	<i>Shrimp Alkaline Phosphatase (rSAP)</i>
<b>Catalog #:</b>	M0371S/L/X
<b>Concentration:</b>	1,000 units/ml
<b>Unit Definition:</b>	One unit is defined as the amount of enzyme that hydrolyzes 1 $\mu\text{mol}$ of <i>p</i> -Nitrophenyl Phosphate, PNPP in a total reaction volume of 1 ml in 1 minute at 37°C
<b>Shelf Life:</b>	24 months
<b>Storage Temp:</b>	-20°C
<b>Storage Conditions:</b>	25 mM Tris-HCl, 1 mM MgCl <sub>2</sub> , 50 % Glycerol, (pH 7.5 @ 25°C)
<b>Specification Version:</b>	PS-M0371S/L/X v2.0
<b>Effective Date:</b>	16 Oct 2023

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

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

**RNase Activity (Extended Digestion)** - A 10  $\mu\text{l}$  reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1  $\mu\text{l}$  of Shrimp Alkaline Phosphatase (rSAP) 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.

**Endonuclease Activity (Nicking)** - A 50  $\mu\text{l}$  reaction in rCutSmart™ Buffer containing 1  $\mu\text{g}$  of supercoiled PhiX174 DNA and a minimum of 3 units of Shrimp Alkaline Phosphatase (rSAP) 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  $\mu\text{l}$  reaction in rCutSmart™ Buffer containing 1  $\mu\text{g}$  of a mixture of single and double-stranded [<sup>3</sup>H] *E. coli* DNA and a minimum of 10 units of Shrimp Alkaline Phosphatase (rSAP) incubated for 4 hours at 37°C releases  $<0.1\%$  of the total radioactivity.

**Non-Specific DNase Activity (16 Hour)** - A 50  $\mu\text{l}$  reaction in NEBuffer 4 containing 1  $\mu\text{g}$  of PhiX174-HaeIII DNA and a minimum of 10 units of Shrimp Alkaline Phosphatase (rSAP) incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.

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