

New England Biolabs Certificate of Analysis

Product Name: *Sulfolobus DNA Polymerase IV*
Catalog Number: M0327S
Concentration: 2,000 U/ml
Unit Definition: One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into acid insoluble material in 30 minutes at 55°C.
Lot Number: 10038423
Expiration Date: 02/2021
Storage Temperature: -20°C
Storage Conditions: 10 mM Tris-HCl , 100 mM KCl , 1 mM DTT , 0.1 mM EDTA , 50 % Glycerol, (pH 7.4 @ 25°C)
Specification Version: PS-M0327S/L v1.0

Sulfolobus DNA Polymerase IV Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0327SVIAL	Sulfolobus DNA Polymerase IV	10032965	Pass
B9004SVIAL	ThermoPol® Reaction Buffer Pack	0031712	Pass

Assay Name/Specification	Lot # 10038423
<p>Endonuclease Activity (Nicking) A 50 µl reaction in ThermoPol® Reaction Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 units of Sulfolobus DNA Polymerase IV incubated for 4 hours at 37°C and 55°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	Pass
<p>Exonuclease Activity (Radioactivity Release) A 50 µl reaction in ThermoPol® Reaction Buffer containing 1 µg of a mixture of single and double-stranded [³H] E. coli DNA and a minimum of 20 units of Sulfolobus DNA Polymerase IV incubated for 4 hours at 37°C and 55°C releases <0.1% of the total radioactivity.</p>	Pass
<p>Non-Specific DNase Activity (16 Hour) A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 2 units of Sulfolobus DNA Polymerase IV incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p>	Pass
<p>Protein Purity Assay (SDS-PAGE)</p>	Pass

Assay Name/Specification	Lot # 10038423
<p>Sulfolobus DNA Polymerase IV is $\geq 95\%$ pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p> <p>qPCR DNA Contamination (E. coli Genomic) A minimum of 2 units of Sulfolobus DNA Polymerase IV 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.</p> <p>Single Stranded DNase Activity (FAM-Labeled Oligo) A 20 μl reaction in ThermoPol[®] Reaction Buffer containing a 10 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 20 units of Sulfolobus DNA Polymerase IV incubated for 30 minutes at 37°C and 55°C yields $<10\%$ degradation as determined by capillary electrophoresis.</p>	<p style="text-align: center;">Pass</p> <p style="text-align: center;">Pass</p>

This product has been tested and shown to be in compliance with all specifications.



Katie Gebhardt
Production Scientist
22 Feb 2019



Michael Tonello
Packaging Quality Control Inspector
14 Mar 2019