

New England Biolabs Certificate of Analysis

Product Name: Magnesium Chloride (MgCl₂) Solution
 Catalog Number: B9021S
 Concentration: 25 mM
 Lot Number: 10038438
 Expiration Date: 05/2022
 Storage Temperature: -20°C
 Specification Version: PS-B9021S v1.0
 Composition (1X): 25 mM MgCl₂

Magnesium Chloride (MgCl ₂) Solution Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
B9021SVIAL	Magnesium Chloride (MgCl ₂) Solution	10020022	Pass


Assay Name/Specification	Lot # 10038438
<p>Conductivity (buffers/solutions) The conductivity of 25 mM Magnesium Chloride (MgCl₂) Solution is between 5.1 and 6.2 mS/cm at 25°C.</p>	Pass
<p>Endonuclease Activity (Nicking) A 50 µl reaction in NEBuffer 2 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 µl of Magnesium Chloride (MgCl₂) Solution incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.</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 20 µl of Magnesium Chloride (MgCl₂) Solution 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>PCR Amplification (5.0 kb Lambda DNA, Mg²⁺) A 50 µl reaction in Standard Taq (Mg-free) Reaction Buffer containing 1.5 mM Magnesium Chloride (MgCl₂) Solution in the presence of 200 µM dNTPs and 0.2 µM primers containing 5 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 5.0 kb product.</p>	Pass
<p>Phosphatase Activity (pNPP)</p>	Pass

Assay Name/Specification	Lot # 10038438
<p>A 200 µl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl₂ containing 2.5 mM p-Nitrophenyl Phosphate (pNPP) and a minimum of 40 µl of Magnesium Chloride (MgCl₂) Solution incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	
<p>qPCR DNA Contamination (E. coli Genomic) A minimum of 1 µl of Magnesium Chloride (MgCl₂) Solution 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>	Pass
<p>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 Magnesium Chloride (MgCl₂) Solution 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.</p>	Pass

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



Tony Spear-Alfonso
Production Scientist
28 Aug 2018



Jay Minichiello
Packaging Quality Control Inspector
18 Mar 2019