

New England Biolabs Certificate of Analysis

Product Name: Magnesium Chloride (MgCl₂) Solution
Catalog Number: B9021S
Concentration: 25 mM
Packaging Lot Number: 10069517
Expiration Date: 09/2024
Storage Temperature: -20°C
Specification Version: PS-B9021S v2.0
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	10054951	Pass

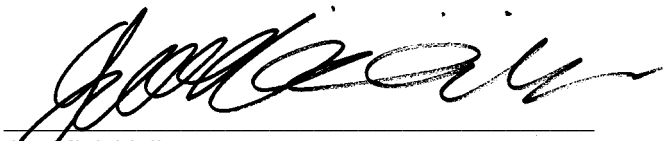
Assay Name/Specification	Lot # 10069517
Conductivity (buffers/solutions) The conductivity of 25 mM Magnesium Chloride (MgCl ₂) Solution is between 5.1 and 6.2 mS/cm at 25°C.	Pass
Endonuclease Activity (Nicking) A 50 µl reaction in NEBuffer 2 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 µl of Magnesium Chloride (MgCl ₂) Solution incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
Non-Specific DNase Activity (16 Hour) A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 or T7 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 20 µl of Magnesium Chloride (MgCl ₂) Solution incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	Pass
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 (MgCl ₂) 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.	Pass
Phosphatase Activity (pNPP)	Pass

Assay Name/Specification	Lot # 10069517
<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.



Christie Vazquez
Production Scientist
03 Apr 2020



Jay Minichiello
Packaging Quality Control Inspector
03 Apr 2020