

New England Biolabs Certificate of Analysis

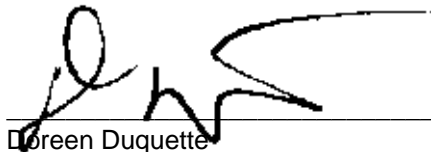
Product Name: Magnesium Chloride (MgCl₂) Solution
 Catalog Number: B9021S
 Concentration: 25 mM
 Packaging Lot Number: 10060084
 Expiration Date: 09/2024
 Storage Temperature: -20°C
 Specification Version: PS-B9021S v1.0
 Composition (1X): 25 mM MgCl₂

Magnesium Chloride (MgCl ₂) Solution Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
B9021SVIAL	Magnesium Chloride (MgCl ₂) Solution	10054951	Pass

Assay Name/Specification	Lot # 10060084
<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 # 10060084
<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.



Green Duquette
Production Scientist
04 Oct 2019



Michael Tonello
Packaging Quality Control Inspector
02 Dec 2019