

New England Biolabs Certificate of Analysis

Product Name: *Magnesium Sulfate (MgSO₄) Solution*
Catalog Number: *B1003S*
Concentration: *100 mM*
Packaging Lot Number: *10073622*
Expiration Date: *06/2024*
Storage Temperature: *-20°C*
Specification Version: *PS-B1003S v2.0*
Composition (1X): *100 mM MgSO₄*

Magnesium Sulfate (MgSO ₄) Solution Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
B1003SVIAL	Magnesium Sulfate (MgSO ₄) Solution	10072721	Pass

Assay Name/Specification	Lot # 10073622
<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 Sulfate (MgSO₄) 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
<p>qPCR DNA Contamination (E. coli Genomic) A minimum of 1 µl of Magnesium Sulfate (MgSO₄) 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>Phosphatase Activity (pNPP, Buffer) A 200 µl reaction in 1M Diethanolamine @ pH 9.8 and 0.5 mM MgCl₂ containing 2.5 mM p-Nitrophenyl Phosphate (pNPP) and a minimum of 20 µl Magnesium Sulfate (MgSO₄) Solution incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	Pass
<p>pH (buffers/solutions) The pH of 100 mM Magnesium Sulfate (MgSO₄) Solution is between pH 5.3 and 5.7 at 25°C.</p>	Pass

Assay Name/Specification	Lot # 10073622
<p>PCR Amplification (5.0 kb Lambda DNA, Mg2+) A 50 µl reaction in ThermoPol II® (Mg-free) Reaction Buffer containing 2 mM Magnesium Sulfate (MgSO₄) 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>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 5 µl of Magnesium Sulfate (MgSO₄) 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>Endonuclease Activity (Nicking) A 50 µl reaction in NEBuffer 2 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 5 µl of Magnesium Sulfate (MgSO₄) 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>Conductivity (buffers/solutions) The conductivity of 100 mM Magnesium Sulfate (MgSO₄) Solution is between 8.5 and 10.5 mS/cm at 25°C.</p>	Pass

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



Christie Vazquez
Production Scientist
27 Apr 2020



Jay Minichiello
Packaging Quality Control Inspector
27 Apr 2020