

New England Biolabs Certificate of Analysis

Product Name: Magnesium Sulfate (MgSO₄) Solution
Catalog Number: B1003S
Concentration: 100 mM
Packaging Lot Number: 10113581
Expiration Date: 02/2026
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	10096258	Pass

Assay Name/Specification	Lot # 10113581
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 (MgSO ₄) 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.	Pass
qPCR DNA Contamination (E. coli Genomic) A minimum of 1 µl of Magnesium Sulfate (MgSO ₄) 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.	Pass
Phosphatase Activity (pNPP, Buffer) A 200 µl reaction in 1M Diethanolamine @ pH 9.8 and 0.5 mM MgCl ₂ containing 2.5 mM p-Nitrophenyl Phosphate (pNPP) and a minimum of 20 µl Magnesium Sulfate (MgSO ₄) Solution incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	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 5 µl of Magnesium Sulfate (MgSO ₄) 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

Assay Name/Specification	Lot # 10113581
<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>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
<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
<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

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

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18 Aug 2021



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18 Aug 2021