

New England Biolabs Certificate of Analysis

Product Name: *Magnesium Sulfate (MgSO₄) Solution*
Catalog #: *B1003S*
Concentration: *100 mM*
Lot #: *0021701*
Assay Date: *01/2017*
Expiration Date: *1/2022*
Storage Temp: *-20°C*
Composition (1X): *100 mM MgSO₄*
Specification Version: *PS-B1003S v1.0*
Effective Date: *29 Nov 2017*

Assay Name/Specification (minimum release criteria)	Lot #0021701
Conductivity (buffers/solutions) - The conductivity of 100 mM Magnesium Sulfate (MgSO ₄) Solution is between 8.5 and 10.5 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 5 µl of Magnesium Sulfate (MgSO ₄) 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 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
PCR Amplification (5.0 kb Lambda DNA, Mg²⁺) - A 50 µl reaction in ThermoPol II® (Mg-free) Reaction Buffer containing 2 mM Magnesium Sulfate (MgSO ₄) Solution in the presence of 200 µM dNTPs and 0.2 µM primers containing 5 ng Lambda DNA with 1.25 units of <i>Taq</i> DNA Polymerase for 25 cycles of PCR amplification results in the expected 5.0 kb product.	Pass
pH (buffers/solutions) - The pH of 100 mM Magnesium Sulfate (MgSO ₄) Solution is between pH 5.3 and 5.7 at 25°C.	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 <i>p</i> -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



