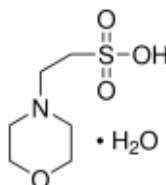


Certificate of Analysis

Product Name:

MES monohydrate - BioUltra, for molecular biology, ≥99.5% (T)

Product Number: 69889
Batch Number: BCCJ1067
Brand: SIAL
CAS Number: 145224-94-8
Formula: C₆H₁₃NO₄S · H₂O
Formula Weight: 213,25 g/mol
Quality Release Date: 12 AUG 2022
Recommended Retest Date: JAN 2027



Test	Specification	Result
Appearance (Color)	Colorless or White	White
Appearance (Form)	Powder or Crystals	Powder
Titration with NaOH	≥ 99.5 %	99.9 %
Water		8.5 %
8.45 % (Theory, Monohydrate)		
Sulphated Ash	≤ 0.05 %	< 0.05 %
¹ H NMR Spectrum	Conforms to Structure	Conforms
Metal Trace Analysis (ICP)	Corresponds to Requirements	Pass
Aluminum (Al)	≤ 5 mg/kg	< 5 mg/kg
Barium (Ba)	≤ 5 mg/kg	< 5 mg/kg
Bismuth (Bi)	≤ 5 mg/kg	< 5 mg/kg
Calcium (Ca)	≤ 20 mg/kg	< 20 mg/kg
Cadmium (Cd)	≤ 5 mg/kg	< 5 mg/kg
Cobalt (Co)	≤ 5 mg/kg	< 5 mg/kg
Chromium (Cr)	≤ 5 mg/kg	< 5 mg/kg
Copper (Cu)	≤ 5 mg/kg	< 5 mg/kg
Iron (Fe)	≤ 5 mg/kg	< 5 mg/kg
Potassium (K)	≤ 50 mg/kg	< 50 mg/kg
Lithium (Li)	≤ 5 mg/kg	< 5 mg/kg
Magnesium (Mg)	≤ 5 mg/kg	< 5 mg/kg
Manganese (Mn)	≤ 5 mg/kg	< 5 mg/kg
Molybdenum (Mo)	≤ 5 mg/kg	< 5 mg/kg
Sodium (Na)	≤ 50 mg/kg	< 50 mg/kg

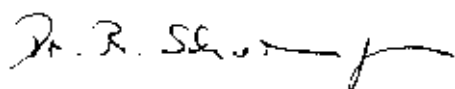
Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



Certificate of Analysis

Product Number: 69889
Batch Number: BCCJ1067

Test	Specification	Result
Nickel (Ni)	≤ 5 mg/kg	< 5 mg/kg
Lead (Pb)	≤ 5 mg/kg	< 5 mg/kg
Strontium (Sr)	≤ 5 mg/kg	< 5 mg/kg
Zinc (Zn)	≤ 5 mg/kg	< 5 mg/kg
Arsenic (As)	≤ 0.1 mg/kg	< 0.1 mg/kg
(MHS-AAS)		
Chloride (Cl)	≤ 50 mg/kg	< 50 mg/kg
Sulfate (SO ₄)	≤ 50 mg/kg	< 50 mg/kg
Extraneous Activities	None Detected	None Detected
Dnases, Rnases, Proteases, Phosphatases		
Appearance of solution	Corresponds to Requirements	Corresponds
(Clear Colorless) 3.198 g in 30 ml H ₂ O (0.5m)		
PH of Solution (PH)	2.5 - 4.0	3.7
3.198 g in 30 ml H ₂ O (0.5m)		
Filtered	No Residue	No Residue
(No Residue on Filter Test)		
UV Absorbance 260nm	≤ 0.03	0.01
UV Absorbance 280nm	≤ 0.02	0.01



Dr. Reinhold Schwenninger
Quality Assurance
Buchs, Switzerland CH

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