

## Certificate of Analysis

Date of Testing: 2023-02-03 15:19:25  
Date of Next Testing: 2027-02-02 15:19:25  
Product Name: **1,4-Butanediol**  
CAS Number: 110-63-4  
Specifications & Purity: 99%  
Lot #: A2331302  
SKU #: **B110391**  
**Analysis:** **172043**  
Storage Temperature: Argon charged

Parameter	Limit Values	Result
Crystallization point	19-21 (°C)	20.59 °C
Water by Karl Fischer	0-0.1 (%)	0.03 %
Refractive index n <sub>20</sub> /D	1.444-1.448	1.45
Density (20°C)	1.016-1.019	1.02
Purity(GC)	99-100 (%)	99.89 %
Appearance (B110391)	White Solid to Colorless Viscous Liquid	White Solid to Colorless Viscous Liquid
Infrared spectrum	Conforms to Structure	Conforms to Structure



John Su  
QA & QC Manager